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THE ART OF
TOWN PLANNING

THE UNIVERSAL ART SERIES

Edited by FREDERICK MARRIOTT

HON. A.C.C.A. (LON.) R.B.C., A.R.E.

MODERN MOVEMENTS IN PAINTING

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Vol. I. Great Britain, America and Japan

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Ancient Rome as in the Sixteenth Century

UNIVERSAL · ART · SERIES
EDITED BY FREDERICK MARRIOTT

THE ART OF TOWN PLANNING

BY
HENRY VAUGHAN
LANCHESTER

F.R.I.B.A., M.T.P.I.



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INTRODUCTION

THE claim has been made that town planning is simply one aspect of the art of architecture, but, though these arts have much in common, the cognate relationship between architecture and sculpture does not preclude us from attempting to draw a line of demarcation between them, and such a line can also be drawn between architecture and town planning. With the tendency towards a more extended technique that we find in all the arts, it has become desirable to subdivide them as much as possible in order to do justice to the characteristics of every branch.

The claim of architecture as the dominant art in town planning can hardly be resisted, being, as it is, based on the axiom that the design of buildings in relation to each other is just as much an architectural question as the treatment of the buildings themselves, but, apart from this, there are other considerations that enter into the town planner's programme, not hitherto regarded as within the architect's province, such as horticulture and arboriculture, and the still more important one of achieving a harmonious relationship between nature and the works of man. Then again, to turn to the practical and economic side, many problems arise for solution on the ground of fitness that cannot be regarded as architectural in character.

But, it may be argued, this does not establish the claim of town planning to a place among the arts, as it may still be considered under the heads of the separate ones which it employs. The logic of this contention need not be discussed, there being many other com-

INTRODUCTION

posite arts, such as drama and the opera, which it has always been customary to review in their integrity, and thus no apology is needed for the inclusion of town planning in this category.

Did the matter end here nothing more would need to be said, but we have still to deal with the "practical" man who will affirm that what we are pleased to term an art is really no more than the convenient arrangement of site and buildings to meet the demands of the time, and that though we may embellish this or that feature the basic principles are purely economic and hygienic. Such a position, though often taken up, perhaps from a spirit of reaction against the affectations and casual fashions that pass themselves off as artistic developments, would, if pushed to its logical conclusion, involve the affirmation that art of all kinds is a fiction. If art has a part in anything, it has one in everything, and while the tendency of the age has been to exclude it from many of its legitimate fields, it is still possible to uphold its position in a case where both tradition and custom recognise its influence.

It is curious to notice the tendency at the present time to regard the arts, not as embracing an attitude towards life, but as only to be taken note of at recognised times and seasons, if at all. We fill our house with interesting pictures, or our garden with carefully selected flowers, or maybe go, with mind attuned to appreciation and criticism, to pageant or play, but meanwhile pay no attention to the aspect of our streets and buildings, which demand our notice with greater urgency in that they are not there to be accepted or refused, but are an essential influence, for good or bad,

INTRODUCTION

on our every-day life. Until we realise that art is not a thing to be taken in specified doses at specified times the ideal of the city as a thing of beauty in all its aspects will receive but scant recognition.

The first part of this book deals at some length with the history of the growth of towns, and the validity of this form of approach to the subject may be called in question. From those who have not felt an interest in this aspect for its own sake, a demand may come for a justification of what, perhaps, will appear to them a disproportionate expansion in this respect. It might be urged that as our concern is with our city in the present, why then should we travel back through the ages and discuss the efforts of those whose ideas and practice were utterly different from our own? Now, apart from the fact that there are similarities as well as differences, a general retrospective view is the very best basis from which to secure an insight into the problems of our own day. As with all arts, we must obtain some impression of technique, and this impression is most easily acquired historically. Thus only can we see how the conditions of life influence man and his work, and how he, in turn, modified these conditions.

Moreover, apart from being the best, this is also the most interesting and dramatic approach. The imaginative effort in reconstructing and repeopling the past well repays the effort it demands, and gives a power of visualisation which is of inestimable value; nay, indeed, is indispensable to those who would make a mental picture of the future. It is the past, in relation to the present, that helps us with a clue as to how the present may develop in time to come.

INTRODUCTION

As will be obvious, it is impossible within the limits of this book to give more than a slight sketch of civic activities and the material forms they took. All that can be offered is a mere outline, which the reader must fill in with life and colour according to his interpretation of history and all that it means politically, socially, architecturally, and sartorially. It is not enough to reinstate the ruined and fragmentary buildings. The demand is for a mental reconstruction of the entire life of the times, and while there is any amount of guidance towards this end in our picture galleries, museums and books, it requires a definite mental effort to secure the needful visualisations. If this effort be made it will more than repay itself in opening up a new outlook towards what has probably been regarded as a mass of inchoate knowledge unrelated to a definite programme. The study of town planning gives us such a programme, and, besides providing a key to what has taken place in the past, itself gains a greater interest through the recognition of the historic basis on which it rests.

PART I
HISTORY

CHAPTER I

The Ancient Civilisations

FROM the remote time when the first steps towards a social order were taken men found it convenient to devise some system for the arrangement of their dwelling places, and thus we see that this art, though it has so recently found a name, is prehistoric, and as we can regard this term as connoting different ages in different parts of the world, we are able at the present time to study the most primitive efforts in this direction along with those that are typical of the highest degree of advancement yet reached by ourselves and others, and are thus offered the opportunity of comparing many phases of development. These show us, not a continuous improvement in a uniform direction, but, like all other aspects of civilisation, movements towards objectives that are always changing, whereby through long ages an advance may be achieved, but which include shorter periods of retrogression. The typical example of the steady flow of the tide comprehending the onward and backward sweep of the waves, though an old illustration, is too apt a one to be passed over, and it will be seen that again and again we can register a highly developed communal organisation only to pass on to a breakdown in this, out of which the succeeding one gradually takes shape, sometimes on similar, but more often on dissimilar, lines to that preceding it.

It is for us to trace these developments from their earliest forms to the highly sophisticated demands of

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our own time, this course being, if anything, more essential to a clear comprehension of town planning than of those arts less definitely based on social demands.

In some parts of the world the home is even now the circular hut undivided internally, which may be regarded as very nearly the most primitive form of house, and which it will be realised makes but slight demands on lay-out, all that is appropriate in such a case being a reasonable space between one hut and another. Notwithstanding this the group is a true village, and when, moreover, it is enclosed with a palisade, or other mode of defence, illustrates a type the variations of which demand at least a passing notice.

As there are now but few primitive tribes not under the control of the dominant races, we shall have to go far afield to find the fortified village, which was the rule in former times. Possibly the earliest defences were those against the predatory beasts, man's original competitors for the products of the earth, but long before the days of which we have knowledge man fought with man for the scanty subsistence that was to be gained at such a stage, and the defences had to provide against attack by rival groups. The most general expedient was the selection of a hill-top having a conformation that enabled a ditch and rampart to be formed with the minimum of labour, as we must not forget that the primitive tools available involved much greater exertion in such work than would now be the case. Elsewhere the protection of water was sought for, and one type of lake village was developed by the improvement or construction of a small island in some

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lake or lagoon by forming an encircling fence of timber and wattle and consolidating the earth within this, so as to provide a site for the group of huts. Where such water was tidal it was a convenient agent for the removal of refuse, a matter always a trouble with communities in those remote times, as may be witnessed by the kitchen-middens and other deposits that have disclosed the locations of prehistoric settlements, and have incidentally afforded valuable indications as to crafts and habits.

The huts on low sites were built above the surface, but in high and well-drained ground they were excavated, the surface soil being formed into a low rampart which carried the eaves of the circular roof that radiated from a central post. The remains of such structures can be traced in the "hut circles" on our uplands, while good examples of the first-named type were found in the lake villages at Glastonbury. At the present day structures not very dissimilar may be found in the Western Highlands, among the Esquimaux, and among some of the peoples in tropical countries. The limitations of our subject preclude the discussion of points of detail in these buildings, but it should be mentioned that the hill defences were elaborated by making the entrances indirect and by duplicating, and even triplicating, the encircling ditches and ramparts. It has been suggested that the cattle were herded in the outer ring, but it is more probable that they were coralled in the centre, a practice maintained by the Kaffirs to this day.

Thus we reach the conclusion that the factor exhibiting itself earliest in communal planning is that of

THE ART OF TOWN PLANNING

defence, probably first against wild animals, then against rival tribes, and that only subsequently does the organised arrangement of dwellings appear, and, later still, the provision of buildings for other purposes.

To follow up these phases and note how more defined planning arose, the first point of interest that strikes us is the fact that rectangular building derives from the need for more than a single chamber, for we find two-roomed huts of an oblong shape with circular ends ; practically two huts have coalesced and are covered with a single roof oval in plan. This is the first stage towards the rectangle that soon comes after it, and instantly provokes the need to follow some order in grouping. This order is at first only partial, being dominated by already established routes, and takes the form of a number of groups, each on lines approximately parallel but at various angles to each other, the primitive equivalent of much that we shall find later on, wherever the routes have preceded the buildings.

The next stage will be found to be a definitely rectangular plan, which is the elementary scheme in all ages for the plotting of a town ; dwellings having become rectangular, the streets follow suit, and the first and most obvious pattern is a series of straight streets separating uniform square blocks. Subsequently both streets and blocks were differentiated in size and importance, in order to provide for buildings of varied character, and also because it was seen that streets might be placed farther apart in one direction than in the other, thus leaving the islands oblong instead of square.

These oblongs have remained throughout the ages as

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the typical utilitarian plan for areas composed of dwellings, the type and proportions of these not affecting the requirements as to access, and the only variation being that where conditions demand an approach to the back of the house site the rectangular island is bisected longitudinally by a subsidiary road. The monotony of such a plan when employed by the ancient civilisations was usually relieved by the siting of palaces, temples, and other public buildings, and by the embellishment of the more important centres and lines of route.

For towns of moderate size on fairly level sites the practical advantages are in favour of a rectangular plan, and by a certain amount of skilful modification it can be made to meet the æsthetic demands as well, subject to the proviso that marked natural features should dictate appropriate departures from geometric design. Where this has not been appreciated we may at once conclude that the art of town planning is at a rudimentary stage, whether we find our examples in ancient Greece or across the Atlantic.

The adoption of a rectangular plan in defiance of the character of the site may be regarded as more in antagonism to both practical and æsthetic requirements than any other error in the inception of a town plan, and its result is usually more disadvantageous in regard to both these aspects than where the plan has been allowed to develop itself out of conditions that were once dominant, though time may have rendered the results invalid. Only in the circumstances and with the qualifications referred to above can the rectangular treatment of the town plan as a whole be held to be adequate.

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With this brief synopsis of the question of the primitive plan we may pass on to consider the subject from an historic basis which will bring to our notice many illustrations of cause and effect, and will demonstrate how intimately the material structure has at all times related itself to the religious, social, and economic demands of its time, and how variations in these have compelled adaptations on the efficiency of which has often depended the success or failure of the civic organisation.

While we may dismiss the primitive types of village comprising circular huts and the hut-circle dwellings as affording merely a starting point for our studies, and also the lake and cave dwelling groups as involving little that can be regarded as considered planning, we must bear in mind that these were often contemporaneous with organised plans elsewhere, of which we can find sufficient traces to recognise that they embody an ordered scheme, though not enough to indicate the lines on which the plans were laid out.

There is less definite guidance for our studies in regard to the great nations of Western Asia and the neighbouring lands than in the case of many peoples at a much less advanced stage of civilisation. While explorers have been able to uncover the great palaces of Assyria, Babylon and Crete, and while the temples of Egypt still stand integrally visible, we are left with only the vaguest hints as to the disposition of populous cities owing to the fact that the less substantial structures occupied by the mass of the people have either disappeared or have left too little to attract the attention of archæologists. Even in Egypt, where

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investigations have been more comprehensive, very little has been brought to light in respect of the arrangement of towns earlier than the Græco-Roman occupation. Only the block of houses uncovered at Kahun gives us some indication of the probable type of lay out, and these are dwellings of minor importance, constructed, it is supposed, for those concerned with the erecting of the pyramid of Illahun.

The planning of the great buildings of various dates from 3,000 B.C. onwards, which have been uncovered in Western Asia, show that rectangular forms predominate, and traces of city walls confirm the conjecture that the general planning was on these lines, or at all events rectilinear, while in Egypt the strong feeling for axiality in the temple plans renders it hardly probable that this did not extend to the cities, of which these temples must have been the most striking features.

If at the date of the highly developed cities in Egypt and Assyria we glance westward towards Southern Europe and the Mediterranean coasts, we find ourselves at a much more rudimentary stage. Without embarking on complicated ethnological studies as to the interactions of the prehistoric peoples inhabiting this part of the world, it will suffice for us to accept that their organisation, originally patriarchal in type, gradually took shape on lines feudal in character, and though details are still obscure, the results from the town-planning point of view are so near to those of early mediæval times that if we were to cut out the whole Græco-Roman contribution to civilisation, we could almost conceive a continuity linking the sixth century B.C. with the sixth century A.D., and forget that the

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twelve centuries had elapsed between them. As a broad generalisation, these two eras might be termed the first and second feudal periods in European history, and their cities are characterised by marked similarity in type.

The site is chosen for purposes of defence, and not by reason of economic suitability ; it is on high ground with steep escarpments, at the top of which the walls are built. If it be an isolated hill, so much the better, but if on a spur, the defences are strengthened at the isthmus. Special defensive works are also added at the gates, and either the highest or the strongest position is devoted to the *arx* or fortress. The towns of what we may term the first feudal period, built by the Pelasgi, the Etruscans, and other competing races, not being sited for economic reasons, were usually abandoned during the domination of Rome ; but where this was not the case they proved exactly suited to the demands of the second feudal era, as is illustrated by such examples as Perugia, Viterbo, Orvieto, Fiesole, Volterra, Cortona, and other mediæval cities, all on Etruscan sites.

This may be accounted for by the fact that there was no great change in the modes of fighting between these times ; the weapons had remained much the same, and, therefore, similar forms of defence were appropriate. The only great distinction that we meet with is due to the change in religious belief, the first period being Pagan, and the second Christian ; thus, while a dominating observance in the first case was the provision of a worthy tomb, in the second this activity was diverted to the place of worship. The Pagan

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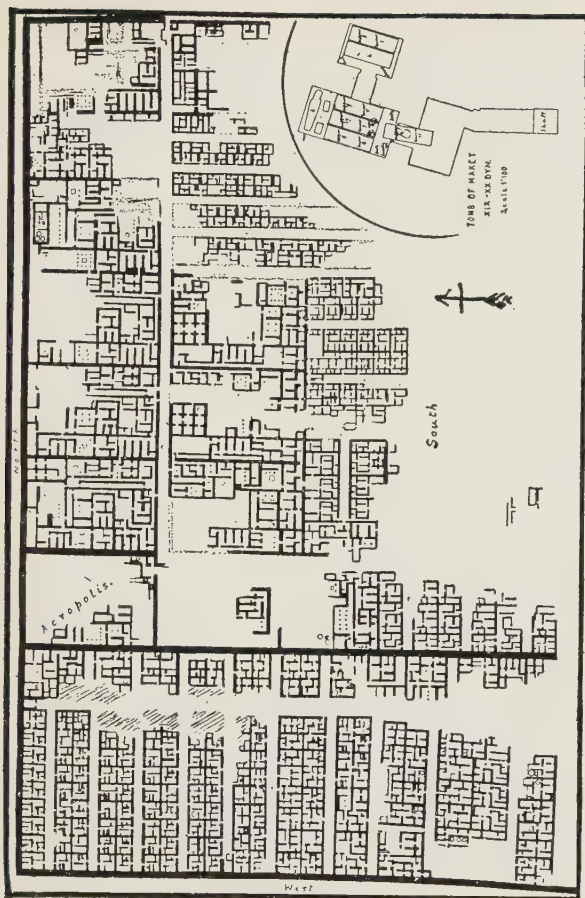
tombs might not be within the town, and, consequently, outside the walls we find a veritable city of the dead, built to simulate that of the living, except that it was excavated or artificially covered. This necropolis was sometimes as extensive as the city of the living, and, being less exposed to destruction, tells us more of the life of the time than the ruins of the actual town. We find tombs made in the likeness of the house, with benches representing couches, and even tables and chairs, while paintings of banquets and hunting scenes adorn the walls. From these we can reconstruct the vanished city, and can realise that it was at least as well organised as those which re-established themselves twelve or fourteen centuries later ; in some ways, indeed, better, for while the Greek was cultivating his unsurpassed sense of artistic expression the Etruscan was devoting himself to technical improvements in the crafts and in the material amenities of city life. He ignored the artistic refinements, and was content to look towards other peoples for guidance in artistic expression, but Greece recognised his skill in craftsmanship, while his systematic provision of water supply and drainage was adopted by the Romans, and has been frequently placed to their credit.

Such services imply a fairly definite scheme of planning, but what this was has not so far been established. The knowledge we possess seems to indicate a preference for rectilinear streets, but not a uniformly rectangular plan ; indeed, this latter would hardly have been possible when we see the highly irregular outline of many of the sites selected, which were defined by the natural formation of the hill.

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Besides these hill cities, there have been discovered others on comparatively low-lying ground protected by a moat, and, it is conjectured, inhabited by a people who were originally lake dwellers. For these the term " *terramare* " has been employed, and Haverfield illustrates one of rhomboid outline with definite parallel streets. They take, however, a less important place in our story, and, to return to the hill towns, we may regard it as probable that houses rarely exceeded a single storey in height, and that the " *topless towers of Ilium* " referred to fortifications rather than to the dwellings. This does not destroy the parallelism with later times, for the houses of the Carolingian period were neither lofty nor extensive, and it was only later that the towns became closely packed with the many-storied houses characteristic of mediæval life as we now visualise it. We shall consider this in due course, but must now return to the time when the tribal fort-towns of southern Europe were replaced by those of the rising democracies, first of Greece, and then of Rome. It is not here that the reasons for their fall can be discussed, as we are concerned only with what took their place and the influences that resulted in the change of type.

Naturally, it was not desired to abandon the old position, except where it was clearly unsuited to the changed demands, and in many cases it remained as the nucleus of the expanding city. Rome itself is considered to have its origin in three tribal villages on neighbouring hills, and in several Greek cities the original site became an acropolis around which the later developments grouped themselves, while if we go further afield we shall find similar protected hill tops in Central Asia,



1. Plan of Kahun, an Egyptian Town for Workers

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the East Indies, and, indeed, almost everywhere, if the conformation of the site lends itself to this type of defence.

The chief alternative was isolation by water, and, apart from the before-mentioned lake villages, formed either as islands or with houses standing on piles in the water, we may see cities that grew to considerable importance started in this way, to mention only such outstanding examples as Venice and Mexico. Probably the invention of the artificial moat, which is itself prehistoric, derives from this form of natural protection, either complete or, where imperfect, demanding auxiliary works.

CHAPTER II

Græco-Roman Town Planning

IN order to make the story of town planning intelligible, a compromise must be arrived at between the chronological and geographical aspects, and so we now return to Greece. Here we find it probable that Athens was the first city to be able to descend from its rock, which then became a spot religiously reserved as sacred to Athena, the tutelary goddess of the city, while the latter spread itself around the base of this acropolis.

At this date the growth in general seems to have been irregular, apart from a studied placing of the theatre, agora, temples, and monuments. However, in the fifth century B.C. rectangular planning was adopted, and we find numerous examples of this at Piræus, Priene, Selinus, and other towns in Sicily and Ionia ; in fact, wherever the site was not too uneven to admit of it. Axial planning is only represented by an increased width and importance given to a few principal streets, and even the temples and agora usually found their places within one or more of the island blocks, as at Selinus. Most of these cities were fortified, and outside the fortifications we know that suburbs of inferior and often squalid dwellings spread out irregularly. The ports were designed to accommodate suitably the galleys of that day, but we can pass these by, as we shall find more fully developed harbours in Roman times.

The supreme artistry of the Greeks is shown, not

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only in the refinements and proportions of their buildings, but also in the skill with which these were grouped and located ; but while their brief period of ascendancy is marked by an unsurpassed capacity in these respects, it does not seem to have sufficed for the achievement of a completed system of comprehensive town planning. At the same time, the Greek contribution to the Roman civilisation cannot be disregarded, and the more logical course is to consider the fuller growth of this art under Imperial Rome as Græco-Roman, in which the imaginative factors can be credited to the Greek and the practical and regulative contributions to Rome.

When the military and naval domination of Republican Rome justified the abandonment of the hill sites in favour of those of greater suitability from an economic standpoint, the Greek colonial towns were already established, and served as a starting point in regard to arrangement and equipment. Rectangular plotting was general, but the theatre and the stadium had introduced a circular element, which subsequently attained great importance as a decorative feature, and as one of material value in facilitating the formal treatment of an irregular site. The Græco-Roman period is of first importance to the studies of the town planner, as in it emerge all the main problems of his art, which, together with the means taken to solve them, can be accurately gauged from the remains and from documentary evidence. It is true that this cannot be regarded as the first time in the world's history when such conditions may have obtained, but the older civilisations afford us little evidence of demands so distinct in character as

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to invalidate our accepting the typical Greek and Roman towns as representative of city design in a fully developed form.

As indicated, the Greeks had not carried their schemes far beyond the elementary rectangular plan, and even then there was a great deal of accidental and irregular building. At first the Roman towns were doubtless inferior to those of Greece and her colonies, and probably also to those of the Phœnicians scattered around the Mediterranean, but with increasing political power, the demand for finer cities necessarily arose, and great activity in this work marked the rise of Rome. Naturally the more important undertakings, such as the temple and the forum, received first consideration, but the other claims soon made themselves felt and were met by public or private munificence to an increasing extent.

That the question of town planning was considered of great importance by the Romans is illustrated by the large proportion of his first book which Vitruvius devotes to this subject, while he returns to various aspects of it several times in the subsequent ones.

It is an interesting commentary on the changing ideals of his day that, though he begins by claiming that the city should be placed on high ground for the sake of health, he proceeds to admit that it may sometimes be placed in a marshy situation near the sea coast, if provided with adequate drains and sewers, an obvious concession to the growing commercial needs of the Empire. With the rules he laid down for military works we are less concerned, but a quotation from his chapter on the placing of temples may be admitted as



3. Professor G. Marcelliani's Model of the Capitol and Forum at Rome



4. Rome. From a Nineteenth Century Drawing

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indicating the recognition that the site, no less than the building, should have a symbolic significance.

“ The lanes and streets of the city being set out, the choice of sites for the convenience and use of the state remains to be decided on ; for sacred edifices, for the forum, and for other public buildings. If the place adjoin the sea, the forum should be placed close to the harbour : if inland, it should be in the centre of the town. The temples of the gods, protectors of the city, also those of Jupiter, Juno, and Minerva, should be on some eminence which commands a view of the greater part of the city. The temple of Mercury should be either in the forum, or, as also the temple of Isis and Serapis, in the great public square. Those of Apollo and Father Bacchus near the theatre. If there be neither amphitheatre nor gymnasium, the temple of Hercules should be near the circus. The temple of Mars should be out of the city, in the neighbouring country. That of Venus near to the gate. According to the regulations of the Hetrurian Haruspices, the temples of Venus, Vulcan, and Mars should be so placed that those of the first be not in the way of contaminating the matrons and youth with the influence of lust ; that those of Vulcan be away from the city, which would consequently be freed from the danger of fire, the divinity presiding over that element being drawn away by the rites and sacrifices performing in his temple. The temple of Mars should be also out of the city, that no armed frays may disturb the peace of the citizens.”

Elsewhere Vitruvius gives us instructions as to the construction of harbours, and study of the remains of

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those which date from his time and the subsequent three centuries (40 B.C. to A.D. 260) show a highly developed system appropriate to the naval and commercial operations of that time. Where practicable, advantage was taken of natural inlets, which were deepened and provided with wharves and supplementary defences, but where natural harbours were lacking the constructions were carried out to sea with jetties and breakwaters. Major M. Du Plat-Taylor, in his writings on the ancient methods of harbour construction, has cited numerous examples indicating that it was usual to construct these jetties on masonry piers connected by arches above the water level, a mode that seems to have sufficed to break the seas of the Mediterranean, though in a few exposed places two such viaducts were formed, the piers of the inner being opposite to the voids of the outer, the waves being thus more effectually baffled. These jetties often ran out to sea for some distance, so that the entrance was of considerable depth.

In some cases more than one entrance was provided, and in others we find a wide one covered by a breakwater in front of it. The commercial harbour was provided with wharves, while the land side of the naval port was planned as a series of docks, each accommodating one gallery, with walls between and roofed over to protect the ships from the sun, thus preventing deterioration during the time that they might be out of action. Arsenals were constructed adjoining these naval ports, and the commercial ones were provided with extensive warehouses. The principal port for the city of Rome, at Ostia, shows at least two successive periods of construction, owing to the increasing

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demands of the metropolis, and around it a compact but well-planned town was laid out.

The city of Rome itself cannot be regarded as typical, and yet the conditions to be found here were, if less accentuated, not entirely absent in other large cities at the same date. It is worth while to try and visualise Rome as a whole, when it will make a very different impression from what we might imagine it if our picture were based on the remains now extant. Even at the time when some of the finest buildings were undertaken there was still a great deal of squalor and congestion in Rome, which suffered from the same disadvantages as many other old capitals in having grown up during the tentative efforts to establish dominion, and before becoming the centre towards which the wealth and culture of an extensive empire were drawn. The following extract from the work of J. H. Middleton will give an impression of the city at the beginning of the Imperial era :—

“ In the reign of Augustus a ‘ Metropolitan Building Act ’ was drawn up, which did something to improve the stability of Roman houses. Some of the provisions of this Act are mentioned by Vitruvius. Houses in streets, if several stories in height, were to be built on stone piers, or with walls of burnt brick and concrete, instead of the older method of building walls of unburnt bricks, or of woodwork filled in with ‘ wattle and dab.’ In some respects the Roman houses of the Republican period, and under the early Empire, must have resembled those of mediæval times, especially in the frequent use of upper stories, formed of wood framing, which projected forwards into the street beyond the

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line of the wall below. Examples of these projecting upper stories have been found at Pompeii.

“ In order, therefore, to put an end to the custom of building thick, weak walls of unfired brick, a law was introduced limiting the external thickness of street walls to 2 feet, a thickness which was not sufficient to support upper stories if unbaked bricks were used. The practical result of this enactment, which seems a strange one, was thus indirectly to force on the people the use of stronger materials. Houses shored up with wood and ready to fall are mentioned by Juvenal, and a great part of Rome for a long period consisted of very flimsy and even dangerous structures.

“ It was, however, not till the reign of Nero that a complete reform was effected in the construction of Roman houses. Nero had a new and elaborate Building Act drawn up, requiring fireproof materials, such as peperino, to be used for external walls of houses ; and it appears very probable that he wilfully caused the great fire which destroyed a large part of Rome, in order that he might with effect bring his new Act into operation, and also be able to replan the streets on wider and straighter lines.”

By such drastic clearances the central area was freed for the imposing structures of which we still see the ruins, the state of which is less due to natural causes than to the fact that in the Middle Ages the buildings and monuments became every one's stone quarry, and their marble decorations were broken up and converted into lime. That the slums were abolished is not to be imagined, when we remember the character of the population the city held, for, although the centre was



5. Florence. Mediæval and later Extensions around the Roman City



6. Turin. The Roman Plan extended up to the Seventeenth Century Fortifications

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cleared, the subsequent Aurelian wall (A.D. 270) enclosed large areas that were filled with the houses of the poor. Even the earlier wall of Servius, which embraced less than one-third of this ground, included many districts where no traces of substantial buildings have been found ; in spite of this, many great public buildings were placed outside the wall on the Campus Martius, which lies to the north-west of the Capitol. The chief remodelling of Rome seems to have taken place around the Palatine Hill, on which were constructed the palaces of the emperors, more particularly to the north of it, where the series of forums culminated in that of Trajan, with the Basilica Ulpia, which filled the whole of the valley between the Capitol and the Quirinal. In various parts of the city the great Thermæ occupied large areas, and numerous other public buildings have been located, but these cannot, from their position, have formed part of a plan such as the Romans would have devised if they had not been restricted by old-established roads and by occupied areas dating from earlier times.

It is in this respect that we find Rome not typical of Roman planning, which is displayed much more clearly in smaller towns founded at a later date. Even the little watering place of Pompeii shows the Roman preference for a systematic lay-out, and at Præneste (Palestrina), dating from the time of Sulla, a most skilful treatment of a steep hillside is accredited to that governor.

While the Roman genius for organisation enabled them to cope with the problem of rendering a large town habitable and reasonably healthy, much of the

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magnificence of their cities was due to private initiative. Even before the time of the emperors, leading men provided many important public buildings, and what the emperors did for Rome local magnates endeavoured to emulate in provincial centres. The letters of Pliny and various inscriptions make this clear. Pliny himself, following the example of his father in munificence, gave nearly £9,000 for the foundation of a public library in Como, his native town, and an annual endowment of more than £800 to maintain it, also offering to contribute one-third of the expense of a high school there. The late Samuel Dill, to whose studies in Roman social life we are indebted for these facts, pursues the subject as follows :—

“ The letter which records the offer shows Pliny at his best, wise and thoughtful as well as generous. He wishes to keep boys under the protection of home influence, to make them lovers of their mother city ; and he limits his benefaction in order to stimulate the interest of the parents in the cause of education, and in the appointment of the teachers.

“ Yet Pliny is only a shining example of a numerous class of more obscure benefactors. The gifts were sometimes made merely to win popularity, or to repay civic honours which had been conferred by the populace. They were too often devoted to gladiatorial shows, and other exhibitions which only debased the spectators. Yet the greatest part of them was expended on objects of public utility—baths, theatres, markets, or new roads and aqueducts, or on those public banquets which knitted all ranks together. There was in those days an immense ‘ civic ardour,’ an almost passionate

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rivalry, to make the mother city a more pleasant and a more splendid home.

“ With regard to municipal expenditure, the budget was free from many public charges which burden our modern towns. The higher offices were unpaid, and, in fact, demanded large generosity from their holders. The lower functions were discharged, to a great extent, by communal slaves. The care or construction of streets, markets, and public buildings, although theoretically devolving on the community through their ædiles, was, as a matter of fact, to an enormous extent undertaken by private persons.

“ The cities did much for themselves out of the public revenues. But there are many signs that private ambition or munificence did even more. The stone records of Pompeii confirm these indications in a remarkable way. Pompeii, in spite of the prominence given to it by its tragic fate, was only a third-rate town, with a population probably of not more than 20,000. Its remains, indeed, leave the impression that a considerable class were in easy circumstances ; but it may be doubted whether Pompeii could boast of any great capitalists among its citizens.

“ Nevertheless, a large number of public buildings of Pompeii were the gift of private citizens. The Holconii were a great family of the place in the reign of Augustus. M. Holconius Rufus had been ordinary duumvir five times, and twice quinquennial duumvir ; he was priest of Augustus, and finally was elected patron of the town. Such dignities in those days imposed a corresponding burden, and an inscription tells that, on the rebuilding of the great theatre, probably about 3 B.C., Holconius

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Rufus and Holconius Celer defrayed the expense of the crypt, the tribunals, and the whole space for the spectators. The literature of the age contains many records of profuse private liberality of the same kind. It has been calculated that Pliny must have altogether given to his early home and fatherland, as he calls it, a sum of more than £80,000; and the gifts were of a thoroughly practical kind—a library, a school endowment, a foundation for the nurture of poor children, and a temple of Ceres, with spacious colonnades to shelter the traders who came for the great fair.

“ But the prince of public benefactors in the Antonine age was the great sophist Herodes Atticus, the tutor of M. Aurelius, who died in the same year as his pupil, A.D. 180. He acted up to his theory of the uses of wealth on a scale of unexampled munificence. The liberality of Herodes Atticus, however astonishing it may seem, was only exceptional in its scale. The same spirit prevailed among the leading citizens or the great *patroni* of hundreds of communities, many of them only known to us from a brief inscription or two. The objects of this liberality are as various as the needs of the community—temples, theatres, bridges, markets, a portico or a colonnade, the relaying of a road or pavement from the forum to the port, the repair of an aqueduct, above all the erection of new baths or their restoration. An old officer of the Fourth Legion provided free bathing at Suessa Senonum for every one, even down to the slave girls. At Bononia a sum of £4,350 was bequeathed for the same liberal purpose.

“ The Antonine age was passionately fond of splendour and brilliant display, proud of civic dignity, and

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keenly alive to the ease and comfort and brightness which common effort or individual generosity might add to the enjoyment of life. It was also an intensely sociable age. Men looked for their happiness to their city rather than to the family or the state. If their city could not play a great part as an independent commonwealth, it might, by the self-sacrifice of its sons, assert its dignity among its rivals."

Such was the spirit that inspired the municipal activities of the Romans—might we not be the better for a greater measure of it in our own day?

The planning of towns established in the Roman colonies has a semi-military character, as it is based on the plan of the camp, one that could be quickly laid out on rectangular lines in accordance with a recognised formula. Timgad, in Algeria, which has been uncovered from its sand drifts, gives a clearer impression of this type of city than any other, but elsewhere we still see the general lines, as at Turin, Florence, and Lucca, in Italy; Autun, in France; and Chester, Chichester and Caerwent, in England. Of course many of these received embellishments in the way of public buildings and arcaded streets, which raised them above the standard of the purely military settlement; and while some achieved an ordered dignity of effect, we must look to Asia Minor for the more imaginative flights in this direction, where the cult of luxury long established in those parts was responsible for the elaborate refinements in the lay-out and decoration of such cities as Palmyra, Gerasa, and many another where the colonnaded street, the arch, and the vista were regarded as essential factors in city design. Again

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at Alexandria, the home of the later Greek culture, all the practical amenities that Rome understood so thoroughly were accompanied by a luxurious splendour in design, grouping and arrangement which, surviving the degradation of most of the more northern cities, extorted reluctant admiration from the Arabs into whose hands it ultimately fell.



7. Circassian. A Medley of Walled City

CHAPTER III

Mediæval Cities

WITH the gradual break-up of the Roman organisation the established routine of city government lapsed, and the city structure underwent a corresponding degradation, varying to some extent according to the degree of social and economic deterioration. Thus in the districts where this did not wholly fail we find that the street plan was preserved, as at Turin and Florence. Elsewhere, owing to subsequent complete abandonment, the original plan remains clearly defined—at Palmyra and Timgad for example—but in most cases the site continued to be occupied, the original lines being gradually obliterated and now only capable of being traced here and there, either owing to their casual preservation or by excavation down to a level below the rubbish accumulated during the centuries when control was lacking.

In post-Roman times Europe was faced with the task of remaking itself and reconstructing its national groups. This was a slow process, and we have, therefore, the advantage of being able to follow from small beginnings the enlargement of villages into towns, and the gradual growth of civic organisation, which passed through many stages before approaching the degree of order maintained under the Roman dominion.

We see the expansion of the Teutonic peoples, who, according to Tacitus, had never evolved a civic life, and had, indeed, a distaste for it. We see them, wherever they went, organising the country on an agricultural and

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pastoral basis, with no intention of encouraging the growth of towns, and that only step by step did these either establish or re-establish themselves by reason of commercial advantages, or, as is perhaps more usual, by the demand for a fortified position to control the district under the feudal lord. We must leave it to the historian to demonstrate why national organisation took the form known as the feudal system. He will show us that it was the most obvious and direct road towards evolving order out of comparative chaos, and though its defects are manifest, no other method would appear likely to have operated as expeditiously. According to the views already expressed, it was not a novelty, but rather a return to what was customary at an earlier stage of the world's history, for were not Minos and Agamemnon, Tarquin and Porsena, prototypes of our mediæval chiefs ?

However, what concerns us is not these and their warfare, but what they were impelled to build, and how these buildings influenced the city structure in the Middle Ages. First we find the need of a strong place or castle, and this gathered beneath it the growing town. The last vestiges of Roman civilisation having gone, we bid good-bye for many centuries to the conscious exercise of the art of town planning, and from this aspect the title of the "Dark Ages" is not undeserved, though in many ways they were by no means dark, and the cities gradually grew into those forms of beauty and charm that depend on imaginative conception taking advantage of accidents and employing these in accentuating expression. To refuse the town planner a share in the harmonious *ensemble* that

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characterises the mediæval town may appear an unnecessary abnegation, but it is only by an undue extension of our definition of this art that skill in the design of buildings in relation to environment could be transferred from the realm of architecture to that of civic design, especially where the contribution of the latter is a purely negative one, in that it has permitted some accidental development of which the builder has had the skill to take advantage.

Though the planning of towns at this time was technically unsophisticated, the conditions required that defensible positions should be chosen and should be fortified, and it is to this, in large measure, that the dramatic quality of these cities is due, especially in cases where they are perched on a hill-top with towering buildings accentuating the upward sweep of the slopes around them. These effects are not due to civic, but to military exigencies, and when town planning once more comes into sight its influence does not operate towards the enhancement of this type of effect, but rather in the opposite direction.

Even though we may decline to accept the normal mediæval city as town planned, it yet has much to tell us which, if ignored, would leave a blank fatal to the comprehension of our subject as a whole. The interest of the informal and unexpected in these towns has even evoked a school of city designers basing their technique on effects of this character, to which we shall have occasion to refer later on ; but apart from this there is much to be learnt from the gradual growth of a town, more indeed than from one deliberately laid out on any but the most considered lines, while the results of

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change in conditions, sometimes capable of adjustment, but more often not, are hardly less instructive.

It is here that we can most profitably take up the question of the influences determining location, as, though these have operated through all time, the remoter periods are not more illustrative, while our knowledge is less. These influences are various, but fall under two main heads, economic and military. Even at this stage they cannot be entirely separated, as a position may be strategically good from both points of view. As a rule the economic aspect takes preference, because the question may be put that, if a place has no economic value, what is the object of defending it? There are, however, exceptions, for it was soon seen to be necessary to consider the needs of a district as a whole, and therefore we get the military post. Take a case in the north of England. Newcastle was an economic position capable of defence, and Durham a defensive post of great natural strength having comparatively little economic importance.

We find that it was the invariable practice to enclose the town with walls, as a defence both against casual raids and against more sustained attacks, even small villages in unruly places being planned so that they could be shut up at night, with the inclusion of a sufficient area to accommodate the cattle owned by the villagers. In such cases the houses enclosed a large green and themselves formed the line of defence, leaving only a few openings between them, which could be barricaded. The larger cities had substantial walls, with fortified gates and bastions, not very unlike those built by the Assyrians and their contemporaries, and in



Prospect der Gassen in Nürnberg
 von der inneren Landstrasse bis gegen die äussere Landstrasse

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Prospect der Gassen in Nürnberg
 von der inneren Landstrasse bis gegen die äussere Landstrasse

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detail still more closely resembling those constructed by the Romans in the third century A.D. These earlier walls were not often so massive as to make extensions impracticable when the city outgrew them, but there would always be some effort involved, and where the walls were of a superior type we find a continued struggle to accommodate the growing population within them. Houses were made higher, gardens built over, and thus we get the closely packed and congested town, picturesque it is true, but insanitary, and an easy victim for that terrible scourge of the Middle Ages, the Black Death, which swept over Europe time and again, sometimes destroying one-third of the town population. Even in our day we find it, under the appellation of bubonic plague, decimating Indian towns where the houses are ill-constructed and overcrowded. We have only to look at typical cities which either still retain their walls, or where the line of these remains defined, to realise the influence they had in creating congestion, not only in regard to these places themselves, but also in establishing a standard of over-building that affected many others long after the purely physical restrictions had gone. It is but too easy to fall into such ways, and the gregarious habits of the city dweller have made overbuilding at all times the quick and easy way of meeting his demands. Imperial Rome and mediæval Edinburgh share with many a less notable place an unenviable reputation in respect to the insalubrity of their poorer quarters. These defects were not unrecognised, but the remedies were, even if economically possible, too drastic to secure general support.

That where it was possible to make a start on a new

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site a better organisation was adopted, we see in the case of the activities of St. Louis of France and Edward I. of England as city builders. During the thirteenth century the need arose to lay out a number of new towns, and the operations in this respect ran on lines curiously parallel to those of the Roman colonisations. In a measure the purpose was similar, namely, the establishment of semi-military posts, and, similarly, the military solution of equal rectangular plots was the accepted ideal. It has been assumed that this was a revival of the Roman tradition, but it is more than doubtful if such an assumption can be justified, this being so primitive and obvious a solution where an appropriate site can be selected, and a scheme easily and quickly realisable is to be provided. Indeed, we shall rarely find, since men began to inhabit rectangular houses, that the first stage in town planning takes any other form, and it is hardly needful, when discussing the mediæval plans, to refer these to the influence of the Roman ones or suggest that the American gridiron system is borrowed from either.

The " Bastides " of St. Louis afforded the models on which Edward I. based his plans for Montpazier and Sauveterre, together with numerous other towns which he founded in his newly acquired Duchy of Gascony, and these, in their formal plans, show that the ideals of the time did not exhibit any preference for the picturesque irregularity that we associate with mediæval cities, the latter being merely the outcome of lack of organisation and not of conscious effort.

Fortunately there is another aspect from which we may look at the normal mediæval town. Though

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insanitary and unplanned, it was the home of such varied and vigorous activities that we must not pass on without some realisation of them. Never since those times has civic life been so integrally rounded off as an expression of joyous social co-operation. Not only religious observances, but every public ceremony was made the vehicle of gay and jocund artistry. To take one brief reference as a key-note, we find Matthew Paris describing the pageant of King Henry the Third's marriage in the following terms :

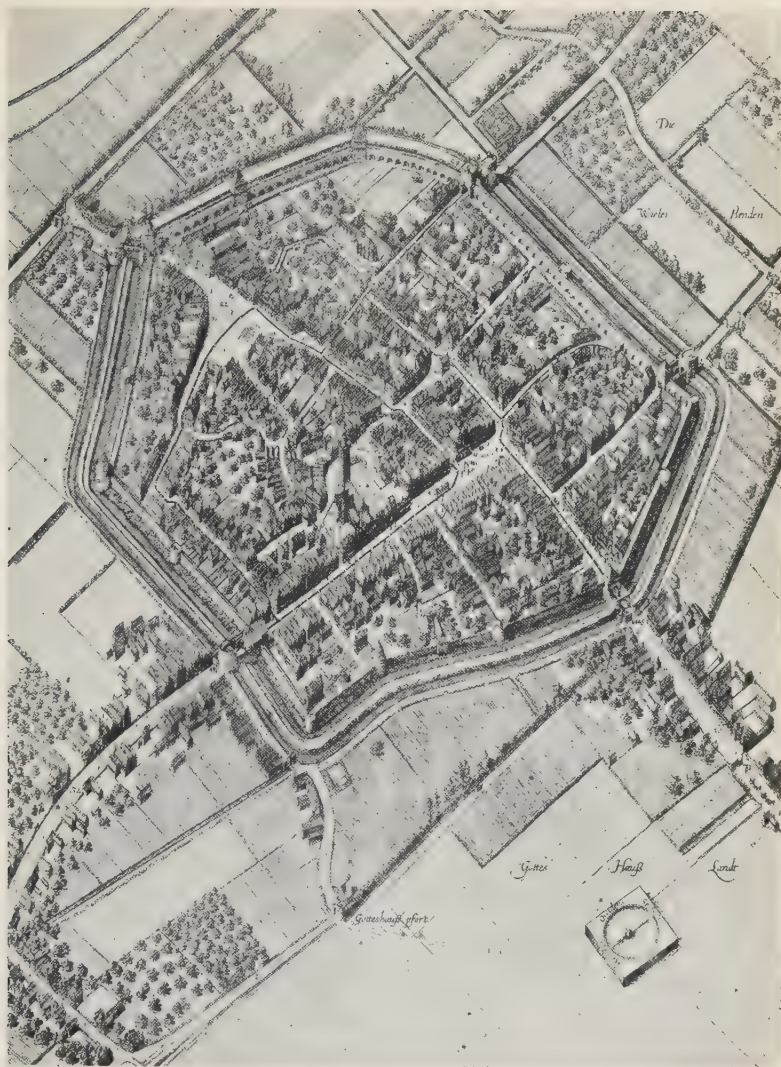
“ There were assembled at the king's nuptial festivities such a host of nobles of both sexes, such number of religious men, such crowds of the populace, and such a variety of actors, that London, with its capacious bosom, could scarcely contain them. The whole city was ornamented with flags and banners, chaplets and hangings, candles and lamps, and with wonderful devices and extraordinary representations, and all the roads were cleaned from mud and dirt, sticks and everything offensive. The citizens, too, went out to meet the king and queen, dressed out in their ornaments, and vied with each other in trying the speed of their horses. On the same day, when they left the city for Westminster, to perform the duties of butler to the king (which office belonged to them by right of old, at the coronation), they proceeded thither dressed in silk garments, with mantles worked in gold, and with costly changes of raiment, mounted on valuable horses, glittering with new bits and saddles, and riding in troops arranged in order.”

Now this is no exceptional or isolated instance, for in every country and in every city of standing innu-

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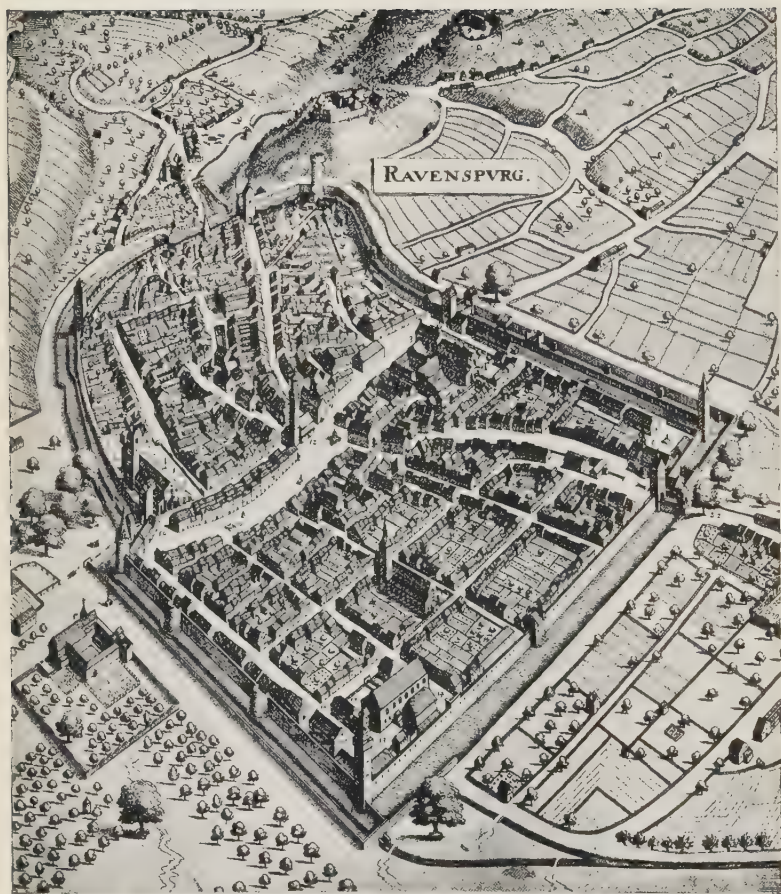
merable illustrations might be cited of annual festivals, saints' days and dedications, celebrated with no less degree of splendour and colour, while the buildings were designed in the same spirit, so that they afforded a fitting framework for these vivid pictures. A few pale remnants have come down to us from those days, a few rather perfunctory ceremonies are accepted reluctantly as a concession to tradition, a few noble churches have not been entirely bereft of their coloured windows and rich decorations, a few inn signs remain of all the blazonry that decorated the street fronts of shop and house. Puritanism may be regarded as a cause or as an effect, but in either case we have for long ceased to delight in embodying this gaiety of spirit in our daily life, and seem only able to allow it an occasional entry, a little uncertain as to whether this form of enjoyment is not too childish for sensible people.

Childish or not, such was the temperament of the mediæval city, which, with all its defects, nevertheless presented a picture unequalled in brilliance before or since. Lacking perhaps the stately dignity of Egypt, Assyria, or Rome, for vivacity and colour it remains unequalled. Do we deceive ourselves, or not, in fancying that there is arising a genuine desire to reconstitute our lives on the rational lines that include artistic expression, not as a matter to be left to a few experts, but as one to be regarded as vital to everybody at every moment and in all aspects of life? If this be the case, the town planner will turn to the Middle Ages, not as an archæologist nor with the least idea of reconstructing them as they were, but in an endeavour to recapture the spirit that dominated the communities in evoking



11. Duren, near Cologne. From a Print by Hollar

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12. Ravensburg, a town extended during the Middle Ages on Rectangular Lines

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an active co-operation towards the making out of all civic activities something fine and expressive, both by means of appropriate ceremonies and balanced artistry. There is plenty of material to work on, and without doubt we all seek for cheerfulness, but the road to it must be a natural one, and not marked out by the affectations which would be inevitable were any imitations of another age to be imposed on us. Mediæval life contained so much that was built up on conditions belonging to its time that there is not the least excuse for attempting the semblance of a revival, though it is essential to realise what its excellencies were if we intend to make an effort to remedy the defects of our present social organisation. Its direct influence on the art of town planning is almost negligible, but indirectly as a criterion of civic activity, and from that, as a guide to what our cities should provide for, it is of such importance as to justify a brief glance at the development of the city structure in those days.

Though the castle of the overlord usually determined the location of the town, it rarely took a central position, the town spreading away from the main gate and keeping to that side only. Probably in most cases the position chosen for the fortified mound was such as precluded development on one or more sides, it being for military reasons better that the castle should be as free as possible from the cover that a crowded city would, if captured, afford to an attacking force. Thus the castle, though often a dominating feature, only affects two or three main routes, and apart from these we may treat the plan of the town as a separate entity. Having disposed of the castle, we find the leading

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feature of the town to be the parish church, towards which the roads tend to converge in all cases where there has been no organised plan. These converging roads having thus ordained that the centre of the city shall be somewhere near the church, the market locates itself either at or not very far from this point, often right in front of the church itself. For a time all trades and crafts would gather round this point, but if the growing importance of the place made this inconvenient, the different trades would tend to group themselves in quarters near at hand; guildhalls and minor churches would arise; the town would have, in addition to its main centre, a number of subsidiary ones, and it would then be found more convenient to shift the markets for produce in bulk to less central positions. This gives the main features that the plan of the larger mediæval city exhibits, and, as most of the citizens were traders or artisans, we need not look for anything in the way of a residential quarter.

There are some exceptions to be noted. In the ports of the Hansa league the typical grouping was supplemented by an important maritime organisation, with its quays and warehouses; in the towns given burgher rights by direct grant of the ruler, the castle would be absent, and the town hall would probably take up an important position in the central group. The cathedral city again might, or might not, have a castle, and while on the Continent the cathedral is usually to be found right in the centre of the town, with us it often merely adjoins it, as in the case of Salisbury, Winchester and Wells, on the lines of those other religious communities which, being exempt from attack, chose

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sites outside the town walls, where land was available on a more liberal scale than in such positions as could have been secured within them. These communities, the depositaries of scholarship and philosophy, were naturally the leaders in the arts and sciences, and their buildings show the best standard of ordered planning and design during this period, while, as the earlier colleges were modelled on them, the university towns exhibit mediæval planning at its best, without congestion and with well-proportioned and well-grouped buildings set in pleasant garths and gardens.

No great change in civic ideals took shape until the coming of the Renaissance, and such developments as preceded this accentuated rather than modified the typical character of the city. The elaboration of fortifications penned it up still more firmly within its walls, and where the overflow was driven into suburbs outside, these were so detached and inferior in convenience as to offer no serious competition to the city itself in the way of discouraging over-building. So long as the trade with the East passed across the Continent the growth of the business centres was unchecked. Only with the discovery of the sea route round the Cape did this begin to slacken, and it is perhaps not a mere coincidence that this set-back is the prelude to a period of disorganisation which left central Europe, some hundred years later, with wrecked cities and a devastated countryside. Thus we reach a tragic close to mediævalism in those parts, while nearer home it drew to an end, not without tragedies on a minor scale, but only those that are bound to accompany a rejection of standards long recognised as the only valid ones.

CHAPTER IV

Developments in Britain

IF any excuse is needed for devoting a chapter to the growth of towns in Great Britain it is to be found in the fact that our island has, by reason of its being an island, followed a distinctive line of development, and, while occasionally we have conformed to, or imitated, the manners of contemporary nations across the seas, we have more often been impelled to diverge from them owing to the force of circumstances or to temperamental differences.

England has been called by its detractors the suburb of Europe, and now that the garden suburb permits us to regard such a term with equanimity and to postulate merits as well as defects, we may accept it as justified from more than one aspect. As far back as we can carry our imagination, certainly long before the age of any remains now existing, it seems to have been the rule for Britain to be the ultimate goal of migrant peoples from the Continent. Probably other lands towards the edges of Europe shared this, but these being, so to speak, within the town ditch, movement took place gradually, while the crossing of the sea involved a definite expedition by those aiming at a new settlement. Thus the Romans found south Britain inhabited by Gaulish tribes, while central and northern England were occupied by men of different race from those in Wales and Scotland, who, there is good reason to believe, were themselves originally immigrants driven back by the newer comers. There were un-

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doubtedly strongly marked differences in life and customs within the area which fell under Roman domination.

It is likely that the *Belgiæ* and *Atrebates* in the south were constructing rectangular houses, while the tribes in the west and north were living in circular huts. At all events we find the latter, at least as late as 300 B.C., located as far south as Glastonbury, where the lake villages have yielded indications of a fair standard of civilisation, while the numerous hill forts of earlier date could only have been constructed by the co-operation of large numbers, in view of the vast amount of work involved and the primitive implements available. As the Glastonbury villages were composed of circular huts and the hill forts contain no remains of buildings other than hut circles, we may assume that little more than defensive planning existed prior to the advent of the Romans.

These naturally began with the construction of camps on the recognised Roman model, and when control was established the three fortress cities at York, Chester and Caerleon, were, in A.D. 75, made the permanent bases of the Ninth, Twentieth and Second Legions, and the more important camps were given stronger fortifications which ultimately included masonry walls with bastions, and sometimes a covered way under the ramparts. When the country became secure and settled, non-military towns, such as London, Lincoln and Leicester, rose up, together with numerous "villas" scattered about the country, and suburban extensions outside the legionary establishments. These, while displaying Roman influence in their plan, were

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by no means so regularly laid out as the military stations, and their walls were not usually rectangular, but included an area of irregular shape corresponding to the conformation of the ground or the needs of the place. London's earlier enclosure to the east of Walbrook was nearer the standard type than its later wall, still clearly defined, which includes an area by no means regular in shape about a mile in length, while only half a mile in width. The walls of Silchester have all been traced, and in this case also, although the town streets are rectangularly planned, the walls are laid out as an irregular polygon.

Before the disintegration of the Roman Empire involved the withdrawal of the last remaining legions from Britain, there had already been conflicts with the sea folk of north Germany, as is proved by the forts constructed along the east coast during the fourth century, and soon afterwards these immigrants overwhelmed the Romanised Britons, the towns being destroyed by reason of the fact that there was no place for them in the agricultural and pastoral organisation of the newcomers. Thus we find that only in a few instances do our mediæval towns retain traces of the Roman plan, even where the positions are identical.

The initial destruction covered the site with *débris*, and the subsequent ground level is considerably above the original one ; yet we sometimes find the two main cross-roads still surviving, quartering the city, as at Chester or Chichester. What happened at Chester is so unusual in the annals of towns that it demands passing mention. The principal roads seem to have been maintained at their original level, despite the destruc-



14. Milan. Showing Successive Enlargements of City

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tion of the Roman buildings that filled the spaces between. Rebuilding took place on the top of the consolidated remains of these, and the first houses stood at the top of banks on either side of the road. Subsequently little booths lined the lower frontages, and eventually the lower and upper structures were combined, hence we get the Chester "Rows." In other places roads and all were buried under the *débris* and refuse, so that we find the Roman pavements deep below the surface of to-day, in London at a depth of as much as 18 feet. The Great Fire may have helped here, but in other towns the depth is considerable and must be regarded as a reflection on the civic management, or lack of it, in mediæval times.

We now reach a point at which there is a clean slate in regard to town development. With the exception, perhaps, of London and a few other places having outstanding natural advantages, the disappearance of the town was complete, and the needs of the Anglo-Saxon groups were met by the village. Many of the villages then founded have altered very little from the sixth century to the present day, but as others have formed the nucleus of our country towns, small and large, it is necessary that we should have an idea of how their sites were chosen and of their constituent parts. Water was naturally desired, and the presence of a good spring frequently determined the selection ; elsewhere streams are to be found near at hand, but on uplands rain-water had to suffice. Where there was navigable water, a frontage to this was always desirable, and many parishes have long strips running down to river or estuary, a system curiously parallel with that

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even now in vogue in eastern Canada, where farms have been divided into long strips, each with a small river frontage. Again, on the escarpments of the downs and other ranges, boundaries were so delimited as to give each place upland for pasture, woodland on the hillside, and arable land on the plain.

While there were many variants, the more characteristic type of village group comprised the manor house—the home of the thane—with, when he became a Christian, the little church near by, and close at hand the cottages of the churls. Around these were the home pastures and, further out, the open arable land which was allocated for cultivation year by year. A water mill might, of course, have to be at some distance, but the ideal was that the village should be a self-supporting unit, independent of commerce, which only began to re-establish itself later. Lacking this and the idea of employing fortification, we find no incentive to urban development and see nothing worthy of being called a city during this phase.

The Roman system of national roads was not entirely abandoned, but, as may be imagined, many fell into disuse, as the villages demanded no more than a few radial routes which were but poorly linked up with any general road scheme.

We see at Avalon [the isle dominating the Somerset marshland] the site tradition gives to the last stand that British civilisation made against the invaders, and, again, it is in isolated Athelney, in these same marshes, that Alfred musters his forces to overcome the Danes. By this we may picture how little then remained of the Roman organisation of strong places and good com-

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munication between them. Though it is conjectured that Alfred may have done something in town building, it is the castle and church-building Norman who starts us on our road again. While his eye for a site was primarily that of the fighting man, reviving commerce evoked development, first on river banks, and later at some inland centres. The lack of roads demanded that the traffic should penetrate as far up the river as the draught of the vessels permitted, and this often coincided with a point at which it became fordable. Thus many towns now no longer regarded as ports originated as such, with the added advantage that they were at the lowest point where the river could be crossed. As the size of the ships increased the trade moved down the river, and newer towns arose on sites formerly avoided as being too vulnerable to raids from the sea. The map of England illustrates many examples of this tendency, which has operated from Norman times down to the present day.

To return to the castle located as a stronghold from which to control the surrounding district, and the town that gathered at its gate, which, if of sufficient importance, had usually its own enclosing wall, we see that these towns grew up around the lines of approach that conditions dictated, and that only subsequently a more regular lay-out became general, when Edward I., whose *bastides* in France have been mentioned already, laid out Flint, Conway, Carnarvon, and other Welsh *bastides* for the English colonies that he founded there, on a plan that was rectangular, except where the line of wall dictated a variation. The new King's town upon Hull, to take the place of Ravenser, endangered by the

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encroachments of the sea, was on similar lines, and is interesting as the first place where bricks were generally used in the buildings, the idea, if not some of the actual bricks, being imported from Flanders. The old town of Winchelsea being in the same danger, Edward decided to lay out a new one on a site about 100 feet above the surrounding marshes, and here the lines of the very regular plan remain to this day, owing to the fact that it has steadily declined in importance from shortly after its establishment.

These activities of King Edward I. appear to have gone a good deal beyond the general practice of the time in organised regularity, though there are several examples of it even earlier than his day. When in 1220 it was decided to remove from the arid and windswept height of Old Sarum to the plain below, and to build Salisbury there, the plan adopted was approximately rectangular, and it may well have been the delight of water in plenty after the lack of it on the hill-top that induced the designers to divert water from the Avon so that a runlet passed through nearly every street. Elsewhere we find from time to time examples of rectangular, or at least rectilinear, planning, but as a general rule our mediæval towns, as those elsewhere, show the type of plan that develops from the fulfilment of simple needs without deliberate ordering of alignment and site ; generally there was a central area for meeting and business, which became the market-place, and the roads directed themselves towards this, or, if the town had still smaller beginnings, roads leading towards the church, and the market-place, if any, locating itself as near this point as possible. As

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illustrating this, it is interesting to note that a statute of 1285 forbids fairs and markets being held in churchyards. These open centres are now often in large measure disguised, owing to the fact of their having been built over by those who originally established booths or stalls and gradually managed to acquire a vested interest in the sites of these, though, fortunately, there are many cases in which the market-place remains on the original lines, either because the character of the market has remained unchanged or because there has been ample ground for such additional building as was needed.

This latter condition has been fulfilled the more frequently owing to the relatively early abandonment of the walled city in this country. During the settled times of the Tudor dynasty many of our towns spread beyond their walls, which were rarely of a very formidable character; then the walls themselves were abandoned, and in many cases gradually removed, so that at the time of the Civil War of the seventeenth century only a few towns were so defended. From this time onward our island has been free from such alarms as might have evoked the activities of a British Vauban, and practically the only defensive works carried out have been of the nature of coastal fortifications, including a limited amount of protective lines at salient points, such as our arsenals. This circumstance has freed us from one of the chief influences towards congested building, and has resulted in our towns being more extended and having a lower standard of height than is usual in most Continental cities of equal size. That this difference struck the observant foreigner may be

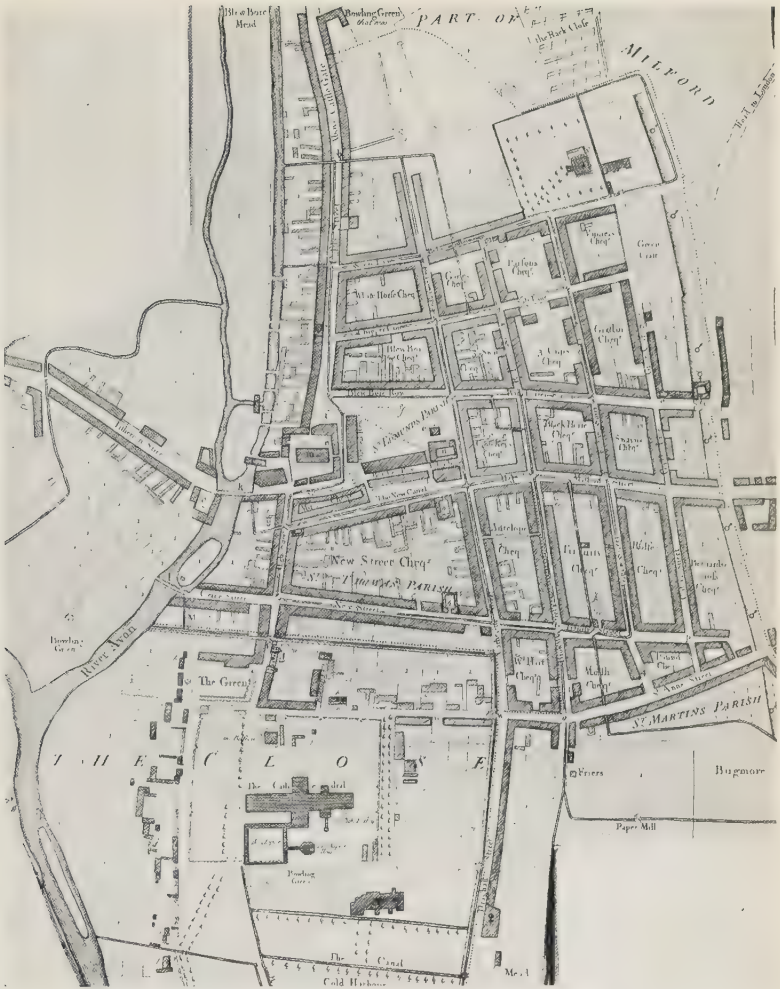
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realised from the remarks of the Count de Grammont on Tunbridge Wells in the year 1664.

“The visitors lodge in little dwellings, clean and convenient, separated from one another and scattered everywhere within half a league of the Wells. In the morning they assemble at the spot where the springs are situated. There is a fine avenue of shady trees, beneath which the visitors walk while they drink the waters. At one side of this avenue stretches a long row of shops, furnished with all sorts of elegant trifles, lace, stockings, and gloves, where you may amuse yourself as at the Fair. On the other side of the avenue the market is held ; and as every one goes there to choose and buy his own provisions, you see nothing exposed for sale which could occasion disgust.”

Though Tunbridge Wells was undoubtedly more of a “ Garden City ” than places given over to commerce, we have only to compare the typical English town houses of the seventeenth and eighteenth centuries with those of other countries to appreciate the difference, as only in a few of the busiest centres did they have four or five floors ; elsewhere two, or at most three, was the general standard, while gardens were quite usual within the town area. The disadvantages of the overgrown city seem to have had some measure of recognition, as is evidenced by Elizabeth’s statute, placing a limit on the expansion of London, an endeavour which at that date naturally proved abortive in view of the impracticability of providing any alternative course, just as the prohibition of the use of “ sea coal ” became a dead letter for the same reason.

Until the industrial development brought about the



15. Salisbury. Rectilinear Planning in the Middle Ages

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16. Oxford early in the Nineteenth Century

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intensive housing described elsewhere, the house was always regarded as the building unit, with something in the way of a garden attached, and the absence of this adjunct was exceptional rather than general.

To realise the character of our towns some two hundred years ago we must seek one that has not participated in the subsequent commercial expansion, an example not easy to find, so generally has this form of activity spread over the country. At the same time many of the little market towns in the eastern and southern counties will give a fair idea of the early days of the great industrial centres, and with these as a guide we can verify our impressions of the growth of the larger towns from the few surviving buildings to be seen here and there among the later ones that tower above them, and from such fragments of the original centre and street planning as have not been altogether obliterated.

This brings us down to the time when the "utilitarian" plans submerged the character of the city organism in ill-devised masses of dwellings, hurriedly pushed up and without visualisation of the changes necessary when a town has had to provide for ten or twenty times its former population. The individual houses were probably no worse structurally, and no better, than their immediate prototypes, but what could be tolerated in scattered groups of a dozen or so became deplorable when massed together by the hundred. The only exceptions to this form of growth were in the quarters reserved for the wealthy, and as both these developments will come under review later on, our summary of the conditions specifically British may be brought to a close at this point.

CHAPTER V

The Renaissance

SO much has been written on the Renaissance, and the general aspects of this phase of history are so well documented, that it would be absurd to recapitulate them here, and all that need be done is to pass directly to its effect on the planning of our towns. As might be expected, this was not one of the earlier developments of the movement. Sculpture and architecture showed the influence of the revived study of classic times before the more general aspect of the towns received attention. Probably the earliest definite scheme on record was that for the remodelling of the Vatican quarters in Rome prepared for Pope Nicholas V. (1447-55), which was not carried out.

Naturally, central areas in proximity to important buildings were the first to receive attention, and when the Piazza della Signoria at Florence was enlarged, Cosimo I. consulted Michael Angelo with regard to its development. His proposal was to carry loggie all round the square, following the design of Orcagna's existing loggia, which stands to the right of the Palazzo Vecchio. This again was not executed, and the nineteenth century reconstruction of central Florence took quite different lines.

As more became known of the ancient planning of the Græco-Roman civilisation, the technique of the Renaissance planners expanded, but though indebted to classic times for the geometrical forms it employed, it diverted these to dissimilar uses, taking a wider area on

which to impose the patterns made up of street, square and circus. We have seen that the Græco-Roman work in city planning was at first mainly rectangular, subsequently combining with this circular features and occasional radials, that axial lines were strongly marked, and that the vista with a terminal feature became a popular form of expression. At the same time the more studied effects in the combination of straight lines with curves were almost always reserved for enclosed areas, such as the forum or the bath. It remained for the Renaissance designers to develop the circle as a feature in the general plan of the city and to lay down radial lines as part of an extended scheme.

As might be expected, Rome took the lead in this development, and the work of Carlo Fontana there initiated the movement towards planning on lines more sophisticated from the geometrical standpoint, his principal achievement being the alignment of the two radial streets meeting the Corso (the old Roman road) in the Piazza del Popolo. Then we see Bernini's masterly forecourt to St. Peter's and other fine roads planned to reconstitute the city as a whole, and to display its more striking buildings to the best advantage. Other Italian towns followed suit, and in the Renaissance gardens of Italy the same general lines of treatment were adopted.

The philosophic aspect of the city plan moved several designers to prepare diagrams for the ideal city, and naturally one of the earliest of these comes from the hand of an Italian, the architect Scamozzi ; but more logical in treatment were the plan for Palma Nuova and the design by Perret de Chambéry, in that, instead of

a rectangular plan being employed, the internal arrangements are adapted to the polygonal outline that the fortifications dictate. Leonardo da Vinci also, among his varied activities, gave thought to the problems of the city, and in one of his sketches shows a double system of water and road routes, probably suggested by Venice ; while another gives us roads on two levels, such as might be employed with advantage in some of our overworked modern towns.

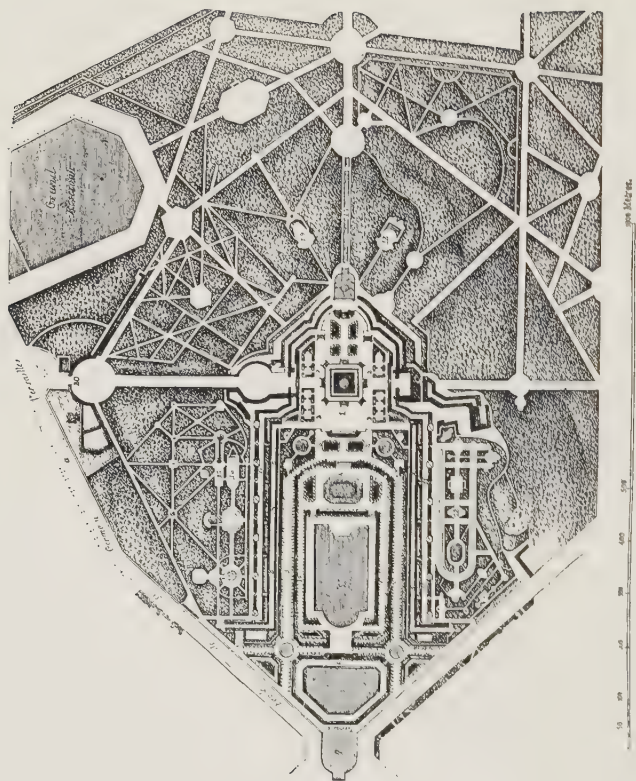
France, in close touch with Italy at the time, was the first to follow up on these geometrical lines of development, and subsequently carried much farther the system of a series of "rond points" connected by a triangulated pattern of routes. It is suggested by Professor Abercrombie that this type of plan was influenced by the practice of forming large hunting parks with rectilinear avenues and focal points as meeting places. Apart from the fact that many of these parks were quite close to the city, as adjuncts to the royal palaces, the dignified formality of their imposing avenues could not fail to suggest the idea of developing city extensions on similar lines ; more probably the similarity may have arisen to some extent from the same ideas working in parallel lines, for we see that the first development of this kind, in Rome, was of earlier date than the French hunting parks.

Reviewing the contribution of the Renaissance on broad lines, it may be regarded as that of the geometrical design of a road scheme which was an advance on the previous rectangular plans. Hitherto the radial principle in planning had only made itself evident by accident, as it were, where route lines had preceded



17. Ideal City Plan by Perret de Chambéry

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18. The Lay-out of a French Park which influenced City Planning
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lay-out. The ancient cities had accepted these but had not embodied them in a deliberate plan, and although in mediæval towns they appear in plenty, this is only where conscious planning is absent. Now we find the philosophy of the art embracing the principle that radial routes must form a feature in the lay-out of all large cities, that these radials must be co-ordinated on geometric lines, and reconciled at their points of junction by means of a "place" planned to harmonise the various angles at which they come together, usually a circular one as the easiest solution, but sometimes made more interesting by the adoption of other shapes.

The acceptance of this kind of planning gives an entirely different aspect to the city. With the ancients the more important spaces were almost always closed in by porticoes conveying the impression of a hall with the sky as roof, and while the street had often a dignified terminal feature, the main effort was usually directed to producing a series of effects by the lay-out of spaces more or less independent of each other. In mediæval towns something of the same impression was achieved by the accident that the streets were narrow and tortuous, and the open centres so closely built up that they appeared almost entirely encircled. Some of the earlier work of Renaissance times displayed the influence of these traditions, to mention squares such as the Place Royale and Covent Garden, and the hemicycle at Nancy ; but there is a continued tendency to diverge from this in favour of co-ordinating all streets and "places" into an open pattern, avoiding the appearance of enclosure and abandoning to a large

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extent the effects secured by continuous or encircling façades.

Under Louis XIV. extensive remodellings were undertaken in Paris, and Le Nôtre, in the gardens of Versailles, adopted a larger scale than that hitherto employed in this type of design, while the same ideals governed the new developments within the city, where a group of able designers were in emulation to make it worthy of the *Roi-Soleil*.

This emulation reached a culminating point a little later, in the competition for a scheme glorifying Louis XV., which has been comprehensively illustrated by Patte. Here it was left to the competitors to select any part of Paris for reconstruction as a setting for the memorial statue, and thus the result was a number of striking suggestions, most of which, though too extravagant for achievement, illustrate very vividly the attitude of the age towards the embellishment of the city. The outcome of this competition was the formation of the Place de la Concorde, which defined the design of this part of Paris in the form that it retains to this day.

The same type of monumental planning was continued right on to the time of Napoleon I., and the "artist's plan" prepared during the revolutionary period has features that still remain on the programme of improvement. These activities slackened later, but were revived when Napoleon III. desired to continue the Imperial tradition and appointed Haussmann to superintend the reconstruction of Paris. The work under his *régime* adhered closely to the eighteenth-century model, which throughout the major part of the nineteenth century set the standard for lay-out on the

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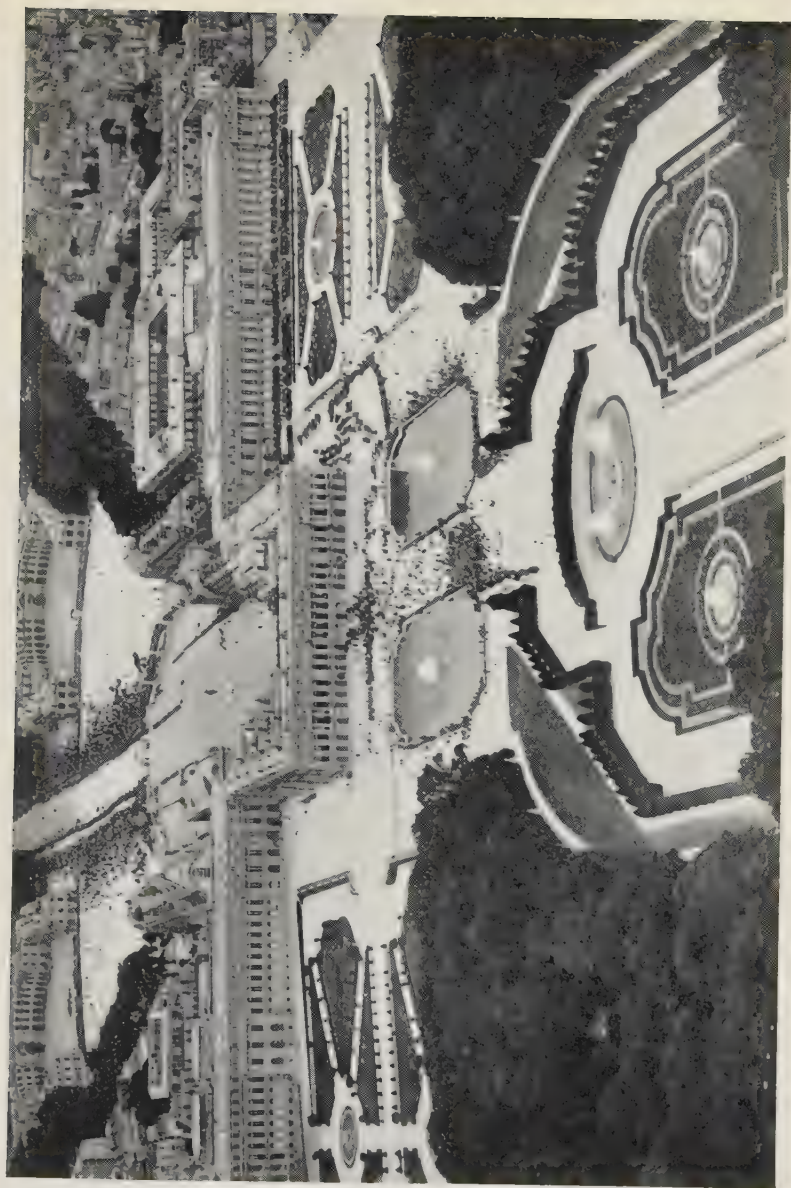
Continent, and even elsewhere when the matter received any consideration at all.

Doubtless this system owed much to the increasing demands of wheeled traffic, which brought the roadway into greater prominence as a factor in town life, but this would not necessarily have dictated the formality of treatment, which was a direct inheritance from Roman times. It is the combination of the ideal of spacious dignity with the demand for accessibility that produced this characteristic type of plan. Before studying it in detail, passing mention must be made of the theory that it arose from military convenience and the advantages it offered in the control of disorder. Though it is established that a number of straight, wide roads have been made with this object in view, and these now take their place in, and are not distinguishable from, the remainder of the plan in which they occur, this consideration does not appear to have affected the original type of design nor to have modified it to any material extent. Despite the generally "closed" character of the Græco-Roman plans, there are numerous instances of the inclusion of the vista where a long approach leads to an important temple or other building, a type of effect probably derived from Egypt or Asia. Now, the enhanced importance given to the straight and wide street in the seventeenth century inevitably brought the value of a terminal feature again into prominence, and as the geometric plan afforded numerous viewpoints for important buildings or monuments placed at street intersections, the geometric plan and the terminal feature became inseparable, and the dominant influences on Renaissance city design.

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These influences were responsible for the reconstructions of mediæval centres with the object of freeing the cathedral to take its place as a street terminal, which, incidentally, often deprived it of surroundings harmonising with its design and destroyed the effect originally intended. This, however, was merely an occasional error, the main virtue of Renaissance planning being unaffected by it, the virtue which lies in a consistent harmony between the planning of the buildings themselves and their relation to each other. Axial and symmetrical planning having established itself for the buildings, it is only rational that this axiality and symmetry should extend to the spaces in which they stand, and thus we get in lieu of the mediæval artist making his designs so as to fill effectively the accidental voids at his disposal, the considered treatment of general plan and building groups as a single operation. This is where the subsequent developments on similar lines failed, and ultimately brought a measure of discredit on this type of plan. The two components becoming separated, street plans were made without any guarantee that the sites would be occupied by appropriate structures. Under no circumstances is it wise to frame a lay-out without definite views as to the buildings it is to provide for, but in the case of planning of the geometrical type such a course is peculiarly conducive to failure.

In France the strength of architectural tradition saved the situation to some extent, but elsewhere in Europe the effect of the formal plans suffered much from an empirical eclecticism in the design of the buildings, as may be seen in the Ringstrasse at Vienna,



19. Versailles. Characteristic French Renaissance Plan



22. The Capitol, Washington. The Central Avenue still obstructed

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while in the United States the even greater latitude as to building masses and design prevalent during the nineteenth century was destructive of any merit to which the plan of Washington by L'Enfant could lay claim to. This scheme, in which the radials of the typical Renaissance plan are superimposed on the traditional American gridiron, could not have been a success without further efforts to reconcile the two, but if the terminal features and the main centres had been more strongly emphasised a better result would have accrued. Recent efforts in this direction have effected improvements, but the radical defect of the numerous irregular intersections can hardly be overcome.

A little later the reconstruction of Detroit after a fire offered an opportunity for the introduction of a geometrical plan which endeavoured to combine the advantages of the diagonal element with a continuously uniform street pattern, and the area then planned forms the centre of the city, though subsequent expansion was on the usual rectangular lines. The scheme offered architectural possibilities of which little advantage was taken. Up till recently these represent the only two instances in America evidencing the influence of Renaissance planning, but now the great movement for civic improvement there bases itself on this tradition, and the same reliance is placed on it as in the Latin countries of Europe, in distinction from those usually termed Teutonic, in which, as we shall see in a later chapter, a new technique has been substituted which aims at putting town planning on a broader footing than that recognised by the artists of the Renaissance.

CHAPTER VI

Aristocratic Planning

WHILE the earlier phases of Renaissance design preserved the democratic convention of the city as a whole, and made no attempt to differentiate between the superior and inferior quarters of a city, we find in the eighteenth century a definite specialisation of lay-out, where attention was mainly directed to the provision of a dignified and impressive scheme for the sole benefit of the more opulent members of the community.

We find examples of this in the extensions of Paris and other large French cities, in the west end of London, in the new town at Edinburgh, in Bath, and, on a more limited scale, in many other English towns. In Germany the reconstructions, both political and economic, after the 'Thirty Years' War, involved considerable activity in town planning, but the new towns, though developed under Governments paternal in form, are not solely aristocratic in conception, as they aim at providing for the community as a whole. At the same time, they are dominated technically by the aristocratic idea, the palace of the ruler being the central feature to which the whole plan is related. Karlsruhe and Mannheim may be quoted as typical. The planning in these cases, though it is aristocratic in type, since it emanates from a Government of that character, differs from those other developments that concern themselves solely with the accommodation of the well-to-do classes.

It will be best to consider the German examples

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first, as more akin to the previous course of Renaissance design. Karlsruhe represents in fact a definite conception for a complete town of the Renaissance type, pivoted on the palace. It dates from 1715, and is notable for its fan-shaped plan, the town occupying rather less, and the park rather more, than half of a complete wheel which has at its hub the palace tower. In the park the radial lay-out stretches for a considerable distance, but as this extent would become monotonous in a town it is cut through by a broad main street beyond which, though the radials continue, the circular roads are omitted and straight ones at varying angles are substituted. The whole plan is an interesting device, but is not one which would fulfil general requirements. It may have owed something to the lay-out of Versailles, but it is, in the main, an original conception.

The plan of Mannheim was more conventional, on the normal rectangular lines admissible for the limited area the town covered. The street proportions are good, but it has no great distinction. Fortunately its later expansion has been well guided, and the inclusion of a radial system in this has made for convenience and order. Special features in other capitals of the German principalities illustrate this type of scheme, but a more interesting example will claim our attention if we cross the Rhine and pay a visit to Nancy, where the architect Heré laid out for the Duke of Lorraine the section of the city which comprises the Place Stanislas, the Place de la Carrière and the Hemicycle. The main buildings were for the accommodation of the Ducal Court, and the whole conception is more in the direction of a

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palace than of the civic group that it has now become. At the same time it was welded into the town plan and links up the old city very effectively with the new extensions to the west.

It is in England, however, that what we have termed "aristocratic" planning takes a special significance, because, while on the Continent the controlling influences nearly always operated with an eye to the town as a whole, the influence of the Renaissance in England, as regards town planning, does not appear to have reached the minds of those who had the control of our cities. Doubtless the historian could find good reason for the extraordinary difference between the development of Continental towns and those of England during the seventeenth and eighteenth centuries. There are a number of political and social factors that come to mind, the discussion of which does not come within our province. Whatever the causes were, the fact remains obvious that during this period the ideal of a replanned town never took form with us, while it was general elsewhere.

The great chance for such a movement seems to have vanished when Wren's plan for rebuilding London, devised by a man of the highest genius in accordance with the best traditions of the Renaissance, was abandoned, and the city was reconstructed on its old lines. Had this opportunity not been lost, there would doubtless have arisen a general recognition of the need for good planning throughout the country, and subsequent efforts would not have been so uniformly limited to private enterprise as they were, with the one exception of Edinburgh, a place always more susceptible to the

SENATE OF THE UNITED STATES-COMMITTEE ON THE DISTRICT OF COLUMBIA

WASHINGTON, D. C.

DIAGRAM OF A PORTION OF CITY SHOWING
PROPOSED SITES FOR FUTURE
PUBLIC BUILDINGS

SCALE 1:3000

DEC 1901

NO. 8-343

COMMISSION ON THE IMPROVEMENT
OF THE PARK SYSTEM

CARL H. BURNHAM CHICAGO
CHARLES F. MERRILL NEW YORK
FREDERICK LAW OLIVER NEW YORK

WASHINGTON, D. C.

POTOMAC RIVER

UNION SQUARE

WASHINGTON MONUMENT

WHITE HOUSE

ST. MARY'S CHURCH

ST. JOHN'S CHURCH

ST. ANDREW'S CHURCH

ST. PETER'S CHURCH

ST. PAUL'S CHURCH

ST. MICHAEL'S CHURCH

ST. ANNE'S CHURCH

ST. JOSEPH'S CHURCH

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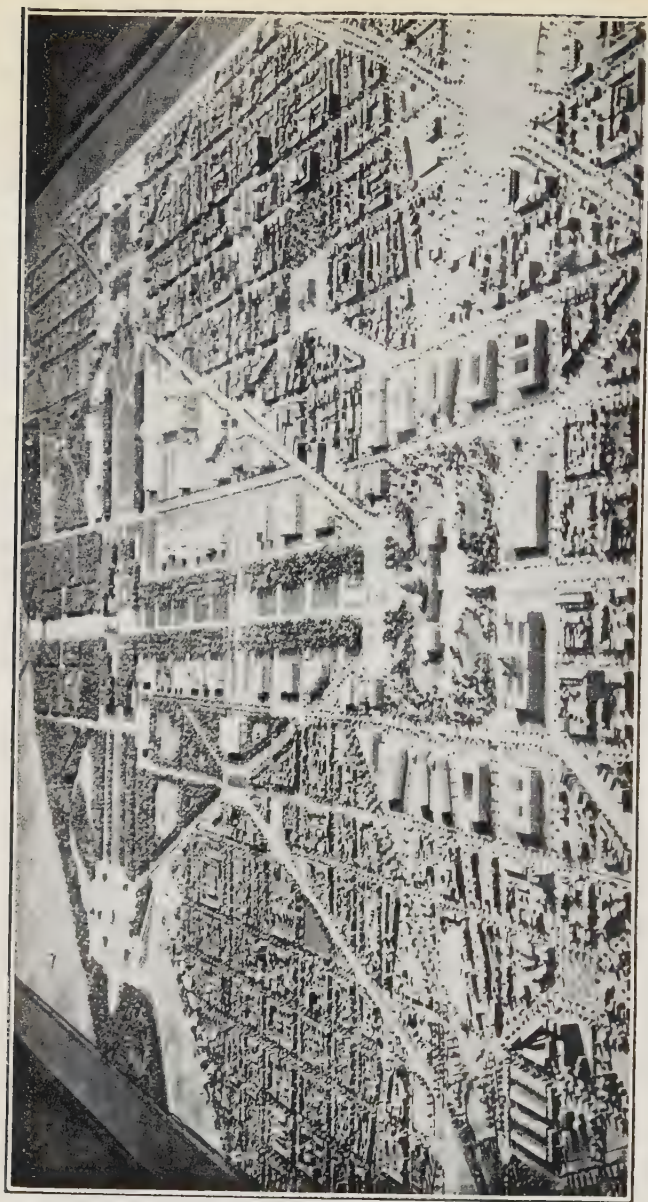
ST. MICHAEL'S CHURCH

ST. ANNE'S CHURCH

ST. JOSEPH'S CHURCH

ST. MARY'S CHURCH

21. Plan of Washington, as improved



22. The Improvement Scheme for Washington. From a Model

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influence of the Continent than the remainder of Great Britain. We must, however, retrace our steps and take up our story at the time when Inigo Jones introduced to this country the manner of planning then in vogue abroad. He had here no opportunity for comprehensive schemes such as were in view in Rome, and even in Paris the new developments had not got very far; thus his imaginings were still limited to the dignified square, itself as much an architectural conception as a building, and with this in his mind he laid out Covent Garden and Lincoln's Inn Fields, and in so doing exercised an influence on the future of London and other cities that he probably little realised. That Wren would have carried the technique of city planning much farther can be realised when we look at Greenwich Hospital, not to speak of his plan for the city, but his opportunity went by, and, while his ablest successors were busy with the mansions of the nobility, the square remained for half a century the only addition to our treatment of the town plan. Bristol, then the second city of the kingdom, constructed the spacious Queen Square near the harbour for its leading merchants, and in London we find a long series of squares built on dignified lines to provide appropriate residential quarters for the aristocracy and well-to-do classes. Though many of these have fallen from their high estate, there are few which have become so defaced that it is not possible to visualise what they once were. We must, however, be aware of the fact that the enclosed gardens belong to a later date, and that the original plan provided an open place, generally with a central monument and, perhaps, an

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encircling promenade under a single or double line of trees.

St. James's, Queen, Red Lion and Soho Squares belong to this period. Hanover, Cavendish and Bloomsbury Squares are a little later. Grosvenor, Portman, and the neighbouring ones follow on ; and the other squares in Bloomsbury continue the succession.

But, if we are to proceed in order of time, we must at this point leave London and transport ourselves to Bath, where we find that, following Queen's Square, designed by John Wood the elder, his son planned first the Circus, with its three roads of entry, so that each might be terminated by the façades of the houses, and continued his scheme to include a sweeping crescent on a larger scale than anything hitherto done, both introducing the circular element that had not so far been adopted in our street planning, though it was to be found in the design of some of our large mansions. It was some time before this element was generally adopted, though eventually it achieved popularity, more especially in our watering places, where the crescent became a standard feature overlooking the sea, and elsewhere when the site seemed to suggest it as a suitable form. In London several examples date from the end of the eighteenth century, but not in prominent positions, till Nash, who fully recognised the value of the contrast between straight and circular, planned Regent Street, with its quadrant, its two circuses, and its termination in Park Crescent.

About the same time Bayswater began to spread westward, and Belgravia ran neck and neck with it,

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reaching its limits the earlier of the two. Both districts include a certain amount of circular planning, but are in the main rectilinear in design. At the later stages of the Bayswater development a slight variation was made in the type of the square. On the adoption of the central enclosure it had been treated as the joint garden of the residents, who crossed the road to enter it. The new arrangement placed the enclosure between the backs of two rows of houses, in the position formerly occupied by a mews accommodating the range of private stables, which were in the eighteenth century regarded as necessary adjuncts to houses of this class. By the middle of the nineteenth century the increase in public conveyances rendered this accommodation superfluous, and terrace houses could have access from both sides ; therefore, it was clearly advantageous that, while one side faced the street, the other should have a private access to the enclosure.

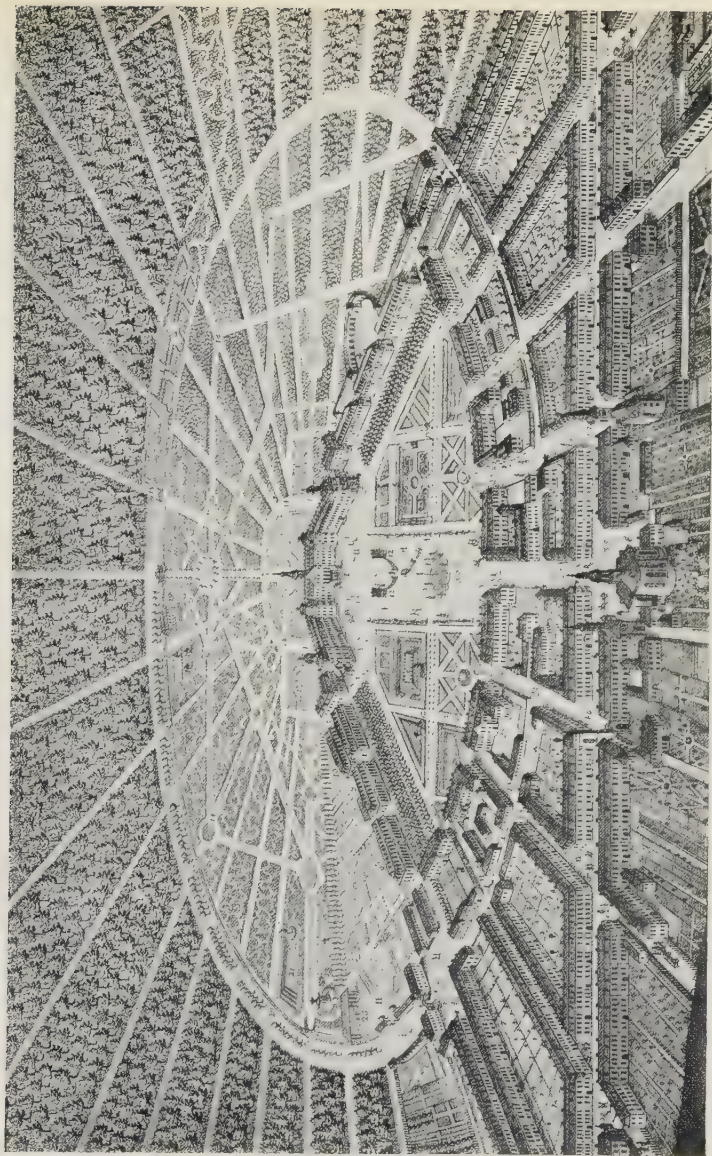
In following the fortunes of London we have been drawn so far ahead that we must now turn back to an earlier date to consider the progress made elsewhere. On our way to Edinburgh, let us pause to pay a tribute of regret to the delightful little " Old Square " in Birmingham, now entirely swept away, which was a perfectly proportioned little " place," with its sixteen wide-fronted early Georgian houses and the roads entering in the middle of each side. Other towns can still show us pleasant little squares, but none possessing more quiet old-world dignity than this did.

In Edinburgh, George Square, to the south of the old town, was built in 1766, and in the following year the most comprehensive development this island can show

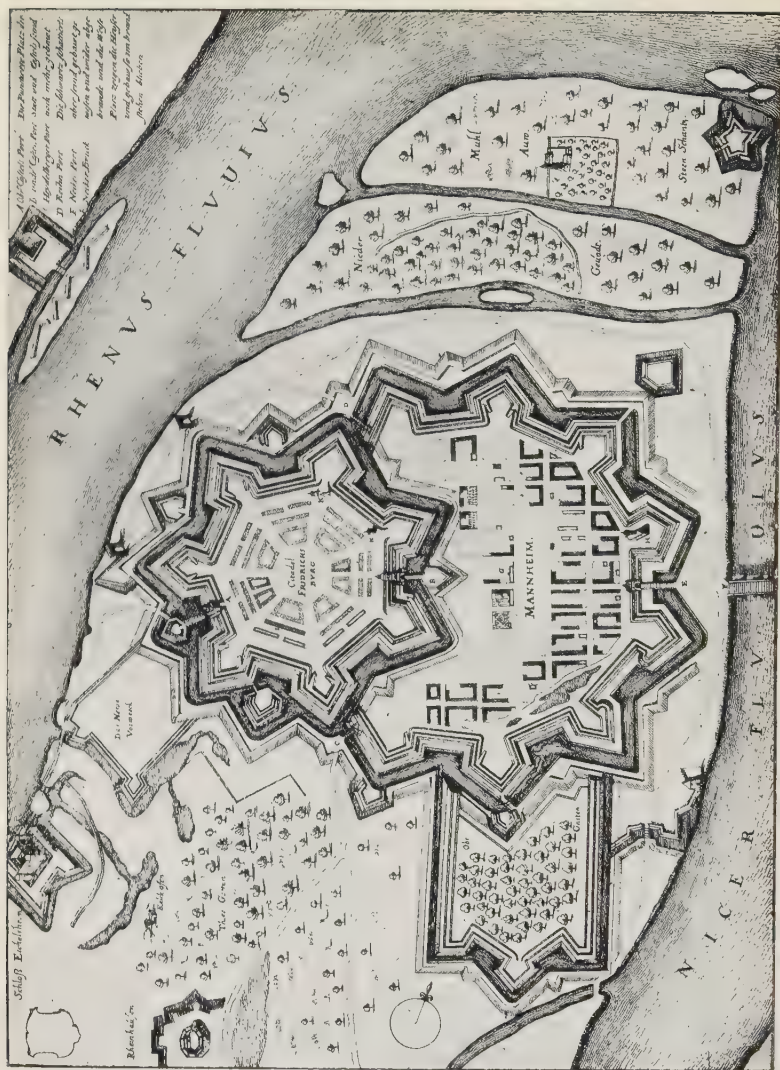
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was commenced from the plans of James Craig. This is the only large municipal scheme of that age, and the southern section, first carried through, is noble in scale, while the simple rectangular planning suits well enough the comparatively level site. Towards the end of the century the extension northward was in hand, and this included a fair proportion of circular planning in its three circuses and two crescents. The site here would have greatly exercised the mind of the modern town planner, as it is on a slope falling rapidly to the north, with a fine outlook in that direction. How far would it be practicable to take advantage of the view and yet secure that the houses should not have an aspect solely northern—what ingenuity would not be expended in achieving this? But the planners of that day had no misgivings; town was town, and had no concern with natural beauties, viewpoints, or sunlight, so that the monumental plan adopted bears no indication of a hillside, and has every appearance of having been designed for a level plain. The standard of dignity here set up was maintained in Edinburgh until the railways came in and cut up the surrounding areas in such a manner that its continuance was no longer possible, apart from the fact that it was only suited to the needs of the wealthier citizens.

The eighteenth century brought to Dublin also much added dignity, with noble buildings, streets and squares, but here the political union with Great Britain had the tragical effect of depriving them of the occupants for whom they were designed and bringing about, even more quickly and emphatically, the degradation to which other “aristocratic” quarters have been



23. Karlsruhe



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reduced owing to the shifting of the centres of fashion. In most cases the displacement has been in favour of business undertakings, but here the finest houses have been turned over to the poorest of the poor, for whom they were quite unsuitable. In the north of Ireland we find that much of Belfast was systematically laid out during the early nineteenth century on not very interesting lines, and crossing over to Glasgow we see that somewhat later there was a good deal of sound planning for the wealthier quarters of the town. The remodelling of Newcastle under Richard Grainger was skilfully done, and, as the fine streets he laid out now form the central area of the town, his work has saved the municipality the task of making costly improvements such as have been found necessary in other large towns.

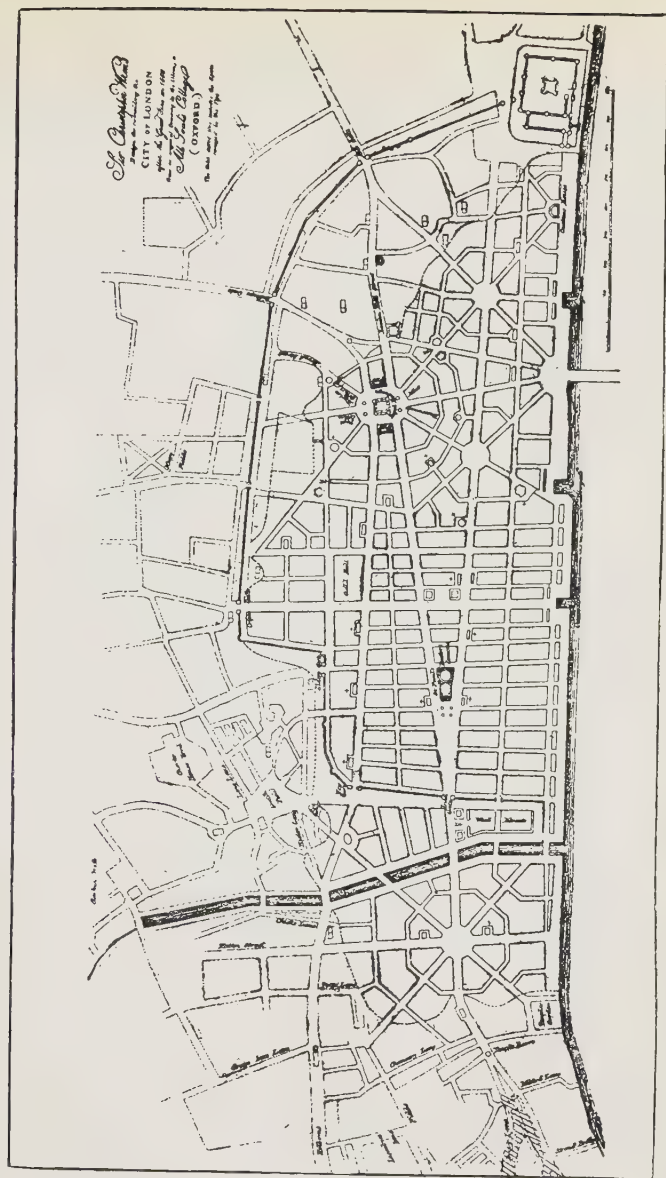
From this summary it will be realised that at no time was the art of planning our towns in complete abeyance ; but if we are tempted to congratulate ourselves on this, we can only do so if we shut our eyes to the fact that all our illustrations have had, perforce, to be drawn from undertakings concerned only with the wealthy, or at least the well to do.

The fact that the west end is usually the part of the city occupied by the opulent, except where the natural formation of the site forbids it, has provoked many attempts at an explanation. It has often been attributed to an assumption that the prevailing wind drives the smoke eastward, a statement that is, to say the least, open to doubt. Is it not far more probable that, the time of leisure and recreation coming towards the latter end of the day, man naturally turns his steps towards

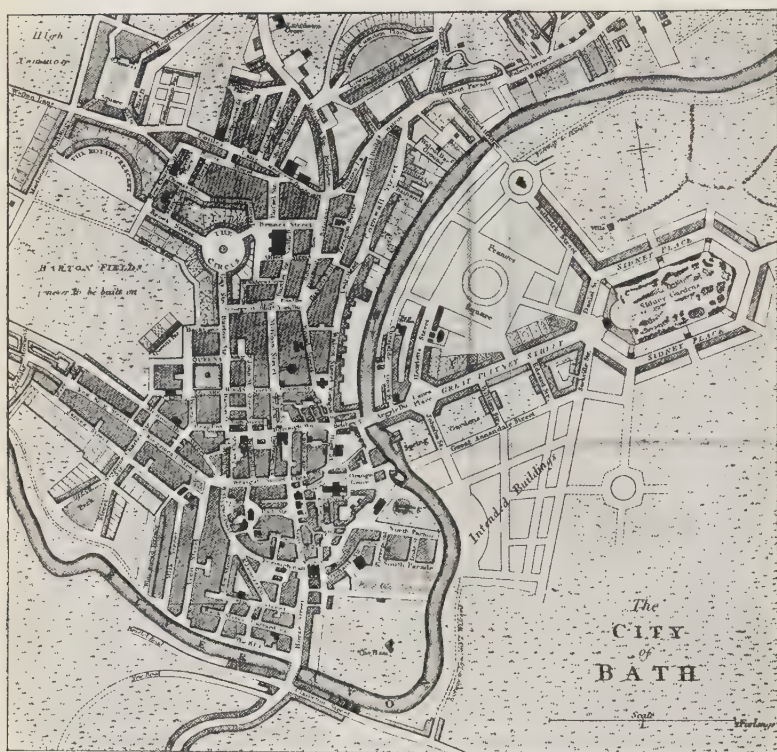
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the brightness of the evening sky ? Let any one try it for himself and, standing at four or five o'clock where conditions in all directions are fairly similar, see in which direction he feels, eliminating any preconceived intention, inclined to direct his steps. Will it not be westward ?

Moreover, in the old days of the walled city, by far the pleasantest evening promenade must have been outside the western walls, and, therefore, all who were in a position to choose gathered themselves together in this quarter, and thus established the "west end" tradition. It may safely be said that the only towns not obedient to this rule are those in which the conformation of the site, or some dominating economic requirement, imposes a marked physical obstacle to the tendency towards such an arrangement.



25. Sir Christopher Wren's Plan for Rebuilding London



26. Bath at the beginning of the Nineteenth Century

Facing page 65

CHAPTER VII

The Industrial Age and After

THE title of "the industrial age" is given, perhaps unfairly, to that period in which the rapid discovery of machine methods of production and the putting into operation of these methods took such a predominant place in human activities as to exclude, to a large extent, all other forms of effort, with the result that we have to record, as against a clear economic gain, a marked set-back in every branch of social comity.

As is generally recognised, the British Isles had almost a monopoly of this unenviable phase, and though it spread abroad, and we see at the present day an aftermath in the industrial centres of Asia, Britain had such a long start in this form of unrestrained production that the evils it brought in its wake were becoming apparent before other countries followed suit, and, therefore, things never reached the same pitch of degradation elsewhere.

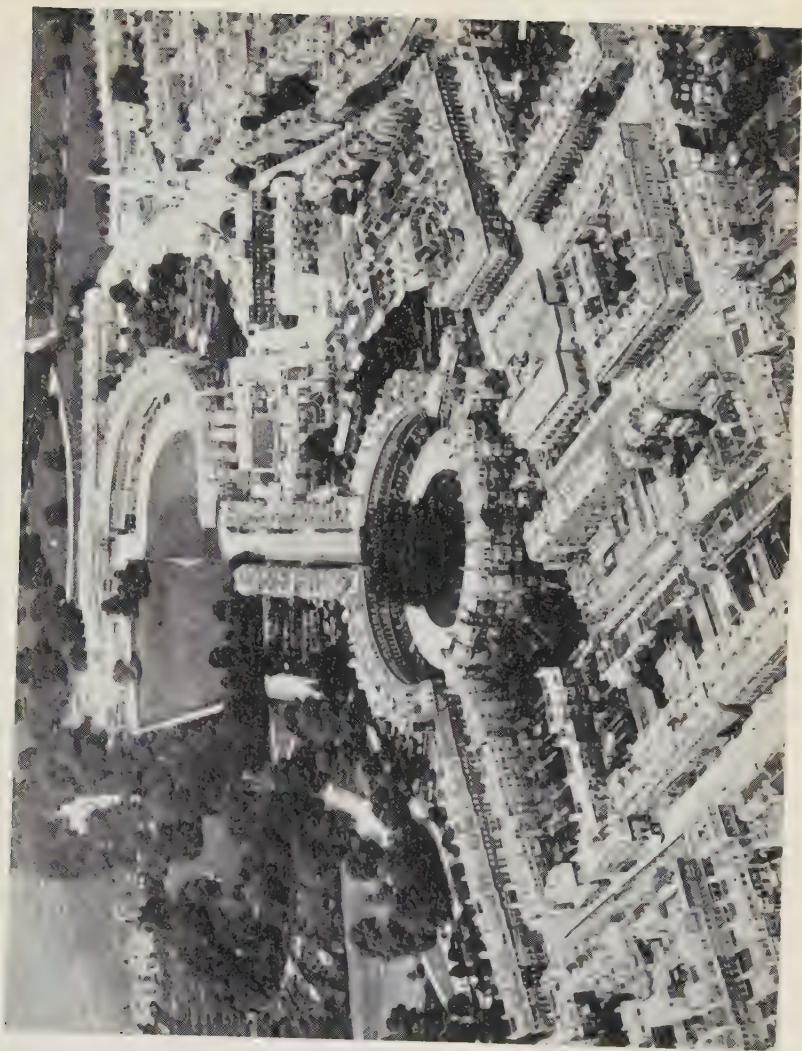
We can see on all sides the legacy that has come down to us from the age that Dickens depicts so graphically in "Hard Times," but for those whose good fortune it has been to live far from any "Coketown," it may not be amiss to quote one paragraph from his description of the outward appearance of that place, though, did space permit, one would be tempted to add others exhibiting the psychology of those responsible, more illuminating than the mere description of appearances.

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“ It was a town of red brick, or of brick that would have been red if the smoke and ashes had allowed it ; but as matters stood it was a town of unnatural red and black, like the painted face of a savage. It was a town of machinery and tall chimneys, out of which interminable serpents of smoke trailed themselves for ever and ever, and never got uncoiled. It had a black canal in it, and a river that ran purple with ill-smelling dye, and vast piles of building full of windows where there was a rattling and a trembling all day long, and where the piston of the steam-engine worked monotonously up and down, like the head of an elephant in a state of melancholy madness. It contained several large streets all very like one another, and many small streets still more like one another, inhabited by people equally like one another, who all went in and out at the same hours, with the same sound upon the same pavements to do the same work, and to whom every day was the same as yesterday and to-morrow, and every year the counterpart of the last and the next.”

It is not easy to imagine how such a lapse from sane living was possible, unless by accepting the theory that man, having made the machine, this took its revenge by mechanicalising him and his life, and sweeping away the last fragments of the gracious relationships that had survived from earlier times.

Communal life has at all times evoked struggles between the groups and interests it comprehends, but the rules of the game have varied, so that while in many cases the results have left no enduring effect, in this one they may take centuries to extirpate. Mere oppression and the reactions it provokes, responsible for much



27. Bath. Geometrical Planning for Buildings appropriate to this Type



28. Cheltenham. Governmental Planning lacking its proper emphasis owing to Detached
Character of Buildings.

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bloodshed and devastation, have left behind fewer ills than this apparently beneficent discovery of vast economies in the methods of production, which unfortunately brought with it an irresistible tendency towards the destruction of individuality, and the change from the man into the "hand," the latter coming to be regarded as having no claim on any intelligent part in the functioning of the social machine.

How this influenced the structure of our towns is sufficiently obvious. The urgent need of the moment was simply to house the accumulating masses of workers as cheaply and as rapidly as possible ; no one had time or disposition to think of their future, and though there is no reason to suppose that the actual standard of housing was lowered, what may be harmless in scattered groups becomes disastrous in vast masses with the cumulative disadvantages of dense smoke and the removal from qualifying rural amenities. Karel Capek emphasised this aspect when he drew the following picture :—

"The horrible thing in East London is not what can be seen and smelt, but its unbounded and unredeemable extent. Elsewhere poverty and ugliness exist merely as a rubbish-heap between two houses, but here are miles and miles of grimy houses, hopeless streets, Jewish shops, a superfluity of children, gin palaces and Christian shelters—everything equally dull, grimy, bare and unending, intersected by dirty channels of deafening traffic. In the south, in the north-west, in the north-east again the same thing, miles and miles of grimy houses, where the whole street consists of nothing but a vast horizontal tenement, factories, gasometers, rail-

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way lines, clayey patches of waste ground, warehouses for goods and warehouses for human beings. There are assuredly uglier quarters and squalider streets in all parts of the world, even squalor is here on a higher level, and the poorest beggar is not clad in rags ; but, good heavens, the human beings, the millions of human beings who live in this greater half of London, in these short, uniform, joyless streets, which teem on the plan of London, like worms in a huge carrion. And that is just the distressing thing about the East End—there is too much of it ; and it cannot be reshaped. In this overwhelming quantity it no longer looks like an excess of human beings, but like a geological formation.”

Planning there was none, except that demanded by the economics of arrangement and construction. The previous standards of density, bad even in the conditions then subsisting, were not amended, and the need for ameliorative provisions was not even visualised, except by one or two more advanced thinkers, such as Robert Owen and William Cobbett, who were unable to make headway against the sweeping current of unrestricted industrialism. Only about 1845 did any strong movement arise to stem this current by means of sanitary measures, a limited provision of open spaces, and by improvements in the character of dwellings.

Titus Salt built a village for the workers in his mills in the year 1851, and though this is by no means in conformity with the ideas of the present day, it indicates an awakening to the fact that the existing standards were in dire need of amendment. However, there was a long lapse of time before any other manufacturer followed

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his example, and though the standard of lay-out and construction had an upward tendency, this was solely from the "practical" standpoint, and it was not until the 'eighties that any further move was made and Bournville and Port Sunlight were founded.

But we are travelling too fast ; before looking into later phases of industrial town planning, it is incumbent on us to visualise more definitely what preceded them. When we come to consider the details of what has been termed the "utilitarian" plan, we see that it embodied almost every possible defect from the town planner's point of view. The actual houses themselves are dealt with elsewhere, but the allocation and arrangement of sites for the homes of the people appear to have been decided with such an utter disregard of normal human demands, as we now visualise them, that it seems no longer worth while to embark on a detailed criticism. Nevertheless, a phase that has left so definite an impress on our town life may not be altogether ignored, and a bare outline must be given of what our heritage is in this respect, if merely as a text indicating evils to be avoided.

"Utilitarian" planning—though the title be a misnomer, it is a convenient one to employ—is simply a negation of town planning as we now know it. Sites were selected merely because they were at hand, regardless of whether they were suitable for occupation. Well or badly drained, it made no difference ; smoke, dirt or noise were of no consequence ; aspect and outlook were alike disregarded ; workers were there, they must have a roof over their heads, and the more you could pack together the better, as it saved the bother of looking farther afield. It was not that at this

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time the knowledge of building or planning had deteriorated, since the rich were given fine streets and good houses ; it was simply that no one had ever had to plan on comprehensive lines for the worker, and until the effects of the neglect to do so began to evidence themselves it did not strike any one that such planning was necessary. It is not to be believed that our forefathers were deliberately inhuman ; more probably it was mere absentmindedness in this direction. They had thought comfort in such things to be a luxury on a par with fine clothes and rich food, and not a matter of general necessity. It took a long time to realise this error, and it is taking longer still to rectify it.

A brief quotation from Mr. Christopher Dawson's description of the state of affairs at this time helps us to realise the position :—

“ The living social organs were those of the national state, and were rural and aristocratic in character. The rulers of the country looked on the development of the new coal mines and factories in somewhat the same way as a Roman senator would have viewed the work of his slave gangs on his provincial estates—as something outside and below civic life. The mediæval constitutions of the municipalities were no longer functioning. The craft regulations were mere antiquarian survivals. The body of Freemen had practically disappeared ; the essential work of the Common Council was being taken over by the Borough Justices of the Peace, and by a number of anomalous bodies—Paving Commissioners, Police Commissioners and the like—created by special Acts of Parliament. Some of the greatest industrial towns were not even corporate cities.



29. Edinburgh, showing the New Town, 1766-1830



30. The "Aristocratic" Period in Newcastle-on-Tyne

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“Moreover, as the ruling classes were not city dwellers, there was no opportunity for contact and adjustment between the new raw industrial city and the contemporary standards of civilised living. Even the rich manufacturers themselves did not make a permanent home in the towns which produced their wealth. It was their ambition to climb out of their town into the society of the country, which preserved all its social prestige, even in districts where the material advance of the new towns was greatest. In mediæval Florence the nobles came into the city as it grew rich, but in nineteenth century Leeds and Manchester the merchants and manufacturers went into the country. There was none of that civic patriotism which caused the mediæval merchant to spend so large a proportion of his wealth in the service and adornment of the city. And, in the same way, the semi-servile class of wage-labourers, who formed the true population of the new towns, grew up without traditions or ideals, with no share in the national franchise or in the government of their city. Their standards of life were even lower, and their interests more limited, than those of the rural class from which they had sprung. No doubt the mediæval artisan had no high standard of life, but at least he shared in the living organic life of his city ; and the gulf between his existence and that of the collier or cotton spinner of the later eighteenth century is almost as great as that which separates civilisation from barbarism.”

If the planning for those engaged in industry had stopped at this point it could only have claimed mention as a deplorable phase, of no interest except as

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exemplifying what to avoid. But fortunately it is possible to supplement our account of this with the story of the last forty years, in which has been exhibited a steady upward movement that has brought it to a point where it became possible for a Cabinet Minister to say, "I am tired of hearing the term working-class housing, it is time now to speak simply of housing," showing us that the ideals of the home need no longer be differentiated in terms of the occupation of the householder.

The obligation of providing good housing for their employees was accepted by Mr. George Cadbury when he founded Bournville in 1879, and by Mr. W. H. Lever (now Lord Leverhulme) when he started to lay out Port Sunlight in 1888. The first-named is more notable for the provisions dictating its development. The basis was seven houses to the acre, giving, after deductions for roads, etc., 500 square yards to each house; one-tenth of the whole was allotted to parks and recreation grounds, and appropriate sites were provided for public buildings. The distance between house fronts was fixed at 82 feet, so that in every way the regulations were liberal in character. From the points of view of health and general amenity, Bournville takes a very high place, but the same favourable verdict can hardly be extended to include the planning from the æsthetic standpoint. The lay-out was uninteresting, and has been very greatly improved on in schemes of later date. At Port Sunlight, much of which was earlier than Bournville, the planning displays a much clearer intention as regards the grouping of the houses, the lines of the roads, and the distribu-

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tion of open spaces. If the economics of planning could be disregarded it might be considered as ideal ; that this was the aim of its founder is not to be doubted ; he has made every provision that struck him as beneficial regardless of a direct return for it, a course which, while it makes the conception most interesting as an illustration of possibilities, somewhat vitiates it as a criterion of the principles to be adopted where less ample resources are available. For example, the plan adopted made heavy demands in making up the ground, and, this done, there is at least 50 per cent. more roadway than is necessary for the buildings served. In the village of Earswick, Messrs. Rowntree have had the advantage of being able to study the work of their predecessors in this line, and have been able to plan, on economic lines, an industrial colony that possesses the merit of good lay-out from the points of view of amenity and appearance.

A later industrial village is Dormanstown, built by Dorman Long and Company for their steelworkers. This is of quite a different type, and owes its formal treatment to the fact that its designers felt that no other type of plan would be appropriate to a uniformly flat site. The village built by C. Furness and Company for their shipbuilders on the other side of the Tees is also more or less geometric in plan.

In other parts of the country various industrial concerns have of late years been making similar provision, and on the Continent we must not pass unnoticed the extensive activities of the firm of Krupp, at Essen, in this direction, while even in the Far East we find at Cawnpore the workers of the Lalimli Woollen Mills

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housed in a model colony, which, while utterly unlike any in Europe, at the same time represents the best possible provision for those concerned.

But there is yet another branch of this development that claims attention. For some fifteen years great advances have been made in the provision of miners' villages, which have in many instances, owing to difficulties of location and site, demanded very skilful planning. Where the land is fairly flat there are no marked differences between these and other industrial villages, but in some parts, such as South Wales, the mines are in very broken country, mostly narrow valleys between ridges and uplands too high for convenience of access and for water supplies. Formerly the cottages were crowded haphazard into these valleys, but of late the hill-sides have been carefully planned out to give convenient routes, and the latitude allowed in proportioning roads to the demands on them has enabled these to be reduced, where it was better to place houses on one side only and this arrangement makes a better scheme feasible. In one or two cases good sites above the valley slopes have been found to be available, and the villages placed at these higher levels are healthier and more attractively developed than those on the steep slopes below.

In the areas now being developed by deep mines, with pit-heads some four miles apart, mining is less destructive of the amenity of the district than formerly, and the villages placed half a mile or more from the shaft can retain an environment of a rural character. There is thus some hope that the impending colliery development in East Kent will not turn this attractive



31. "Utilitarian" Development, Belfast.



“Utilitarian” Development, Preston

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district into the type of Black Country characteristic of the older coal workings, and if it is decided to convert the coal into electric energy at the pit-head the prospect is more hopeful than would be the case if the coal were to be transported to separate factories scattered over the country-side. The Doncaster coalfield includes examples of what might be anticipated in the case of East Kent, where the preservation of the natural beauty of the district is of even greater importance.

It must be placed to the credit of the town planning movement that it has emphasised the fact that, with a few exceptions, industrial activities can economically be carried on without desolating the surrounding districts to the extent of condemning those compelled to occupy them to a life deprived of the amenities which should be every man's birthright.

CHAPTER VIII

Romanticism

IT is curious that, contemporary with that negation of all deliberate planning which marks the industrial expansion of our towns, there grew up a school of design which, while limited in its appeal at the time, was ultimately destined to exercise a very marked influence on English towns, and ultimately to extend thence, in a lesser degree, to other countries. This "Romantic" school quite obviously arises *pari passu* with a like development in literature, and is the outcome of the almost inevitable reaction of the Anglo-Saxon against the hard logic and civic formality of the Renaissance. A quotation from Washington Irving's "Sketch Book" will form a fitting prelude to the consideration of this development :—

"In some countries, the large cities absorb the wealth and fashion of the nation ; they are the only fixed abodes of elegant and intelligent society, and the country is inhabited almost entirely by boorish peasantry. In England, on the contrary, the metropolis is a mere gathering place, or general rendezvous, of the polite classes, where they devote a small portion of the year to a hurry of gaiety and dissipation, and having indulged this kind of carnival, return again to the apparently more congenial habits of rural life. The various orders of society are therefore diffused over the whole surface of the kingdom, and the most retired neighbourhoods afford specimens of the different ranks.

"The English, in fact, are strongly gifted with the

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rural feeling. They possess a quick sensibility to the beauties of nature, and a keen relish for the pleasures and employments of the country. This passion seems inherent in them. Even the inhabitants of cities, born and brought up among brick walls and bustling streets, enter with facility into rural habits, and evince a tact for rural occupation. The merchant has his snug retreat in the vicinity of the metropolis, where he often displays as much pride and zeal in the cultivation of his flower garden, and the maturing of his fruits, as he does in the conduct of his business and the success of a commercial enterprise. Even those less fortunate individuals, who are doomed to pass their lives in the midst of din and traffic, contrive to have something that shall remind them of the green aspect of nature. In the most dark and dingy quarters of the city, the drawing room window resembles frequently a bank of flowers ; every spot capable of vegetation has its grass plot and flower bed ; and every square its mimic park, laid out with picturesque taste, and gleaming with refreshing verdure.

“ Those who see the Englishman only in town are apt to form an unfavourable opinion of his social character. . . . It is in the country that the Englishman gives scope to his natural feelings. He breaks loose gladly from the cold formalities and negative civilities of town ; throws off his habits of shy reserve, and becomes joyous and free-hearted. He manages to collect round him all the conveniences and elegancies of polite life, and to banish its restraints. His country seat abounds with every requisite, either for studious retirement, tasteful gratification, or rural exercise.

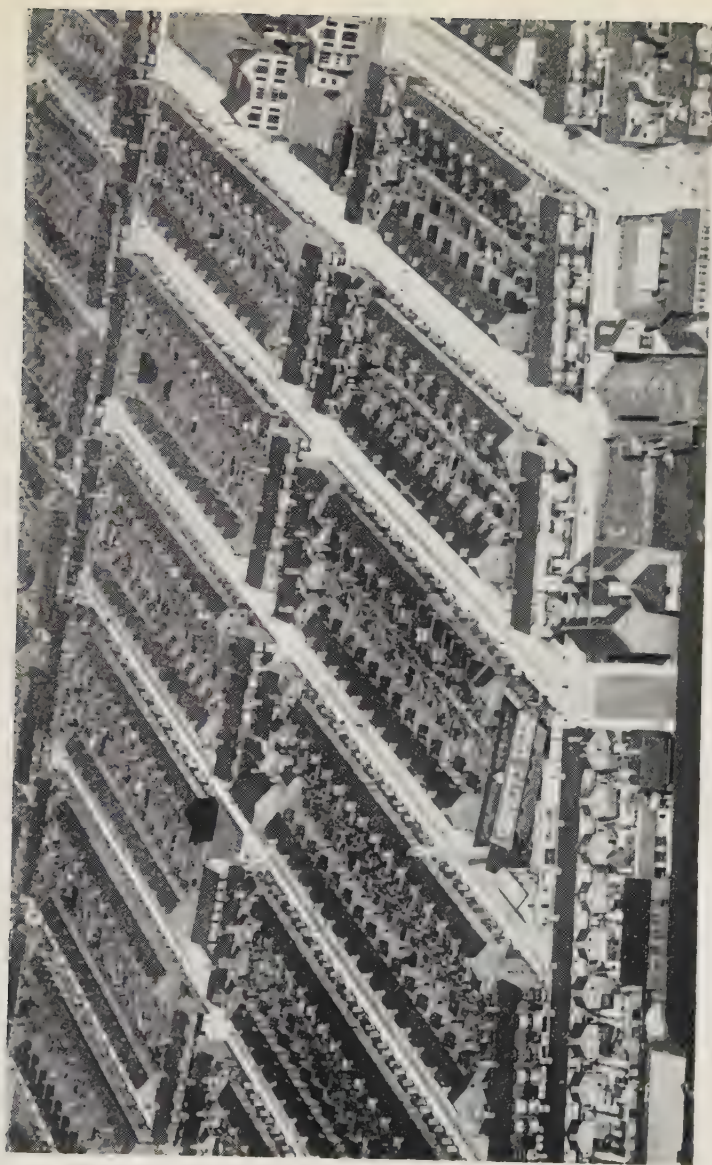
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Books, paintings, music, horses, dogs, and sporting implements of all kinds, are at hand. He puts no constraint either upon his guests or himself, but in the true spirit of hospitality provides the means of enjoyment, and leaves every one to partake according to his inclination."

The first indications of the movement are, as we may well expect from the foregoing, an antagonism towards the dignified and reticent formality of the parks and gardens surrounding the great mansions. These had never been a really national form of expression, and had always owed much to the influence of the Continental gardeners, who had brought their technique into harmony with the standards of the Renaissance, which at no time dominated England to the extent it did the Continent.

The initiative was doubtless with the cultivated classes of the eighteenth century, who found in "Capability" Brown and others, men competent to give their views form and shape. As the result of the activities of these men, most of the large geometrically-planned gardens were swept away, and what were regarded as naturalistic designs substituted. Now, we are not especially concerned with these gardens as such, but their reformation exercised so notable an influence on English town planning of the nineteenth century that we must find space for a brief description of the chief novelties that were then introduced.

The rectilinear and rectangular planning of the architect was to be reserved for buildings only, where indeed it is largely inevitable. As the straight line is not to be found in nature, and as the garden is made



33. Rigidly Mechanical Planning, Middlesbrough

Facing page 78



14. South London. Original Roads well laid out, but Intermediate Spaces filled in haphazard and cut up by Railway Viaducts

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up of natural features, it was decided that the use of forms employing all uniformly straight lines or geometric curves must be abandoned in favour of a lay-out dictated by the eye on the site, in order to make such groupings as could be regarded as pictures simulating those to be found where untouched nature exhibits scenes happily proportioned. Buildings were to follow suit as far as possible ; balance of irregular masses was to take the place of symmetry, and the pictures could be completed by any features deemed appropriate, such as artificial ruins, rock-work and waterfalls. Of course these ideals were rarely pressed to extremes ; roads and paths were still a necessity, and the resulting compromises emphasised the fact that a dwelling-house could not avoid being an artificial intrusion, and that naturalism in relation to human requirements could only be a travesty of nature. The more extravagant features had but a fleeting popularity, but the determination that all paths should take wavy lines and all lakes and planting should have irregular outlines persisted for more than a century, and such ideas are even now the stock-in-trade of many a landscape gardener. As an indication of the established popularity of this school of design, another reference to Washington Irving's " Sketch Book " shows the enthusiasm which its departure from previous traditions had aroused :—

“ The taste of the English in the cultivation of land, and in what is called landscape gardening, is unrivalled. They have studied Nature intently, and discover an exquisite sense of her beautiful forms and harmonious combinations. Those charms, which in

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other countries she lavishes in wild solitudes, are here assembled round the haunts of domestic life. They seem to have caught her coy and furtive graces, and spread them, like witchery, about their rural abodes."

During the earlier days of this fashion public streets were still planned on geometric lines, no departure from these being possible as long as dwelling-houses were built in blocks ; but as Romanticism spread from the few to the many, it became responsible for the vogue of the detached villa, with its garden imitating on a small scale the features of the grounds of a country mansion. Then it was seen that the roads could be aligned on any varying curves that the levels or the scenery dictated. Naturally the dictates of fashion secured a preference for the winding road, and these were often made without any extraneous reason for such an alignment. We find areas around many of our principal towns where the straight road appears to be definitely taboo, as at Bournemouth, Hastings, Wimbledon Park, and elsewhere, and in many cases these have obviously been formed with no specific intention other than that of avoiding the straight line. Nevertheless, futile as many of these schemes were, they have the merit of rendering more flexible our previously too limited ideas as to the possibilities of development, and in our own day we can hold the balance fairly between the over-rigid demands of the geometrical plan and the illogical ones of the later efforts to impart curves and turns to every road, whether the formation of the site suggested them or not. Thus present practice takes account of natural features without attempting the actual simulation of nature, a task clearly

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impossible in relation to the provisions for the needs of human activities.

Outside England, the comparative rarity of the adoption of the villa type of residence has given few opportunities for street planning on "naturalistic" lines, but, at the same time, despite the magnificent examples of formal lay-out then, and fortunately still, maintained, the attractions of the new method proved strong enough to establish the "Jardin Anglais" as the type on which many of the public and private parks were laid out around Paris and other Continental cities. Beyond this, however, with the exception of a spasmodic development at the Petit Trianon, Versailles, where, under Louis XVI., a simulated rusticity was the key-note, romanticism took no hold on planning until towards the end of the nineteenth century, when it reappeared, owing to the initiative of Camillo Sitte, of Vienna, in a new form, supported by very well-thought-out arguments and combined with many sound deductions as to the æsthetics of town planning. He directs his attack on two characteristics of the typical Renaissance plan, namely, its open treatment, without enclosed "places," and its rigid formality on an extended scale. He only accepts the formal within limited areas, and exhibits a distinct preference for a picturesque irregularity in general treatment, pointing out, with justice, that the mind derives little interest from anything which can be appreciated at a glance, such as a straight and uniform street, or an unvarying façade, and deducing from this that geometrical planning should give way to a deliberate effort to recapture by design the accidental qualities of mediæval towns, and to disguise the open

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character of the "place" by masking the street entrances, limiting their number and varying their direction. His arguments are strengthened by the demands of traffic, as it has become increasingly obvious that a number of routes gathered to one point result in danger, confusion and delay. In this respect the geometrically triangulated plan has proved a failure unless laid out on a very large scale. But we are not here dealing with the practical aspects, or the consideration of existing types of plan from the point of view of traffic ; the question is how far we should qualify our designs by simulating the accidental, as has been the general practice in Germany during recent years. The logical mind is naturally in revolt against this idea, as on a par with stage effects unworthy of introduction into an art that should, above all, express purpose, but we may go so far as to suggest that, whereas formerly there was a prejudice in favour of formalism, and developments were liable to be distorted in this direction, there may now be a prejudice against it, with corresponding distortions in the opposite one. Should we not try to base our work on common sense, taking suggestions from the character of the site and surroundings as to the treatment we adopt ? On level ground, with no strongly marked natural features, it would surely appear an obvious affectation to lay out irregular routes and to invent, as it were, accidents, while on undulating sites, perhaps with dominating lines of hill or woodland, it would be equally out of place to introduce a rigid plan. The latter error is the more frequent of the two, therefore we owe this to the Romantics, that they endeavoured to free us from obsessions which

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came to us from the time when tightly packed buildings logically dictated a rigid plan, and if we cannot accept their maxims in their entirety, we can yet apply them when they help us to bring our work into harmony with nature or to employ an economic solution to our problems.



35. Bordeaux. Eighteenth Century Planning, with subsequent Commercial Accretions



10. A Georgian Crescent, Hastings

PART II

THE PRESENT DAY

CHAPTER IX

Civic Hygiene

TOWN planning is so essentially an art of co-ordination that, when we pass from the historic studies to those of moment in our present practice, we find it needful to take into account a number of factors which were not consciously embodied, though not hitherto deliberately ignored, as a basis for the inception of a scheme, and which, owing to our advance in the appreciation of social values, can no longer be neglected in the contriving of plans for towns suited to the requirements of the present time.

The science of social hygiene has received such close attention during the best part of a century, and with results so eminently justifying the labour devoted to its study, that it is no longer possible to visualise the growth of towns otherwise than in relation to the type of citizens it produces. The late stage at which the valid conclusions of the scientist and the social reformer have begun to influence the general arrangement of the city plan is largely due to the fact that, when a number of specialists are working each in his limited field, it takes time to grasp the bearings of the results arrived at, in relationship to each other, and although specialisation in all cases is as necessary in the field of knowledge as in that of production, in both cases the co-ordinating brain must be present in order to employ both science and material.

Now it is only with the development of the art of town planning that the various sciences connected with

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human welfare have been so co-ordinated that they can take a definite form in respect to the handling of our towns as a whole. As has been indicated, the early years of the nineteenth century gave us a system, or lack of system, that as time went on began to exhibit the capability of destroying us mentally and physically. Towns always operate to some extent parasitically, and with the rapid growth of these at the expense of the rural population, even had they been better than they were, the massing together of the people was bound to produce a detrimental effect, but, being what they were, the racial deterioration could not for long fail to attract attention. Of course, the material elements first secured notice. Epidemics of cholera dictated measures for the improvement of water supply and sewerage ; then the diseases due to overcrowding and lack of light and air evoked, somewhat tardily, measures to restrict building density that have since proved inadequate. The resistance of owners, who saw their profits from property diminishing, retarded progress, and it has taken some eighty years to establish a standard that, but for this antagonistic attitude, might have been reached in half the time.

Even were we to assume that we have now reached finality in these respects, an assumption not warranted in view of doubts yet to be resolved in regard to tuberculosis and several other ills that still scourge the poor in our towns, we have only handled one, and that perhaps not the most important, section of our problem.

Step by step we have dealt with such questions as river pollution and the worst cases of air pollution, but this latter problem is still as yet only partially solved,

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for there are many industries that cannot be carried on without filling the air with volumes of smoke, and in other cases, including that of the domestic fire, it is admitted that any remedy presents grave economic difficulties. It may be proved up to the hilt that the annual loss through dirt and fog, and the ill-health and waste of time due to these, would justify an enormous capital expenditure, but with the numerous demands on capital and the change of habits prescribed, it hardly appears likely that the needful reforms will be effected otherwise than very gradually.

Even if we imagine our towns delivered from all the dirt, disorder, and discomfort due to the air being charged with smoke and other impurities, we are still far from achieving the ideal city. Assuming all the physical disabilities removed, we have yet to cope with the psychological ones, if we demand that our cities are to be such as will bring forth the highest type of citizen. Civic activity is not solely concerned with the hygiene of the body ; it must also include all that tends to evoke the pride and dignity of citizenship.

When we make a serious attempt to visualise the existing conditions in any great centre of population, the extent to which these make impossible any wholesome or rational form of life would fill us with despair were it not for the fact that we have a programme for amelioration, a programme that, while it may take generations to realise, does, at the same time, offer features of immediate practicability. The distance we have to go is certainly apt to appal us, and has even induced some reformers to regard our great cities as almost hopeless and to propose breaking new ground

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by making an entirely fresh start. The efforts in this direction have been of the utmost benefit, not so much as an economic solution, for our existing centres, with positions automatically dictated by economic factors, are too strongly entrenched to be greatly affected, but as an illustration of what a town could be like if well organised from the beginning.

The "Garden City," first put forward as a solution of this problem by Ebenezer Howard, was advocated by him on the grounds that the drawbacks of the large town were mainly due to its excessive extent, and that if towns could be limited to a population of about fifty thousand, and designed so that they could not grow beyond this size, a much better life would be possible in them. The garden cities of Letchworth and Welwyn are laid out in strict accordance with these principles, the area to be built on being limited by a surrounding agricultural belt which not only defines the population—a maximum density being prescribed—but also ensures a supply of dairy produce and fresh vegetables near at hand. Factories are encouraged, with the intention that the town shall be a self-supporting organism, and naturally such factories are placed so that they shall not be detrimental to the general amenity, and are under regulation as to the emission of smoke.

Such places as these, together with our newer industrial villages, have proved that communities can have the hygienic advantages of the country together with the social ones of the town, and the idea that our problems could be met in this way is a very attractive one. At the same time it must not be allowed to blind

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us to the fact that this solution can only be practicable to a very limited extent. The position of towns has almost invariably been dictated by productive or commercial factors, and it is only some new development in these that will bring about a new foundation. It may be doubted if Letchworth or Welwyn would have been able to establish themselves but for their proximity to London, and though a few other similarly suitable sites may possibly be found in the future, it is obvious that our attention must be mainly directed to those centres where the masses of population are already gathered, and which are in such urgent need of amelioration.

The difficulties before us in securing cleanliness and order cannot be understated, but, as will be seen subsequently, certain provisions now either in operation or under consideration will assist in this. For areas at present seriously overcrowded the remedies at our disposal are costly to an extent almost prohibitive, except where the houses are in such a bad state as to be condemned for habitation. Then the reduction of the population in any such area involves the increase of transit provisions for the accommodation of those displaced, so that altogether the outlook does not appear hopeful. Probably the most potent influence making for betterment would be a change in the views of those occupying such areas as to what they would regard as possible for dwelling-places and environment, but habits are so engrained that such a change can only be gradual, working through the younger generations that will eventually take the place of those who, living so long under deplorable conditions, have come to

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regard these as quite normal. Discontent and emulation of their "betters" may do something, but until a serious change in their attitude takes place the reconstruction on sound lines of the masses of undesirable dwellings in our large towns will proceed but slowly.

That this can be done with advantage, and without undue extravagance, has been proved by many schemes of "slum improvement" already carried through in London, Birmingham and other cities, but these do not represent a tithe of what is needed to overtake a century of neglect. In many places the worst instances are not to be found among the rows of small and badly built houses, depressing as they may look, but in neighbourhoods that have seen better days, where the large houses are now occupied by a number of families in one and two room dwellings, without adequate provision for separate family life. These are often worse than the overcrowded tenements to be found on the Continent and in Scotland, for the latter have usually been planned for division, while the adapted large houses were not.

The town planner is, however, less dismayed by the magnitude of the task of reorganising our cities than by the very limited appreciation of the fact that such reorganisation is necessary to stop the gradual degradation that town life, as it now is, must result in. Vitality is essential to maintenance of a high place in civilisation, and the vitality of townsfolk is being sapped by conditions which drive them to such narcotics as drink and melodrama. Perhaps the most destructive of all so-called recreations are those based, not on personal action or experience, but on the passive acceptance of



37. Ely. Cathedral encircled by the Town



18. St. Mary's Cathedral, Brook, and off water, some 1/2 mi.

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the real or fictitious activities of others, whether as shown in the football ground or the cinema, and this is the course to which the average town dweller is inevitably driven.

It will be asked whether these are not questions for the sociologist rather than for the town planner, and it is true that it would be quite possible for the former to prepare a programme and for the latter to prescribe the measures by which the demands could best be met. At the same time the technique of our subject so invariably turns on the social influences that dominate it, that a town planner is not worth much who is not also something of a sociologist, and whether the co-ordinations necessary are to be effected by one person, or secured by the co-operation of several, the work can only be efficiently carried through with a clear recognition of the connection between the social requirements and the executive measures. As these requirements vary according to the activities and characteristics of people of different nationalities, and even localities, it follows that there can be no uniformity of practice in planning, and that the statement of this must, therefore, be made in general terms, so that its principles may cover a multiplicity of different modes of operation.

The following chapters, in which the attempt is made to classify town planning operations under various heads, must therefore be regarded as subject to the qualification that there exist numerous differences in social organisation which involve variants of the programme, and that while the general principles may be regarded as valid throughout, the illustrations of these

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depend on special conditions and might take quite another form elsewhere. Social well-being, fundamental to sound town planning, is thus the criterion to which every proposition must be referred, and as this takes so many forms, the impossibility of defining every solution is obvious, and the scope of our studies is necessarily restricted by this limitation. At the same time certain demands are common to most communal developments, and are thus capable of being brought under review in turn.

Towns usually come into being by reason of advantages in respect of production and commerce, but occasionally of others, such as administration, health and recreation. They make their demands for the housing of their citizens, for access to and communication between the various quarters, for the suitable distribution of the different activities, for provision for education and recreation, and for all the other things that will come to mind when we visualise a healthy and active community ; and these aspects must now claim our attention.

CHAPTER X

Preliminary Studies

HAVING briefly cited in the last chapter the range of subjects that come under the purview of the town planner when considering his schemes, it will be well to give some attention to the methods by which he can best present, both for his own information and for the enlightenment of the public he serves, all these factors in such a manner as will enable them to be most readily appreciated, and by this means to justify his proposals both to himself and to others.

Now, it is customary to begin by placing these factors in tabular form, and this has been done in various ways, both in England and abroad, with a view to securing a systematic mode of investigation. It is not appropriate here to inflict these elaborate schedules on the reader, who can only be asked to take it for granted that they cover the ground in all its aspects, including topography, history, economics, housing, communications, hygiene, education, recreation, æsthetics, and administration.

Taking these in turn, we will endeavour to give an impression of what these specific studies involve, but before doing so it will be well to glance at the methods accepted as exhibiting the results of investigations in the most efficient way. We all know that statistical tables are prepared for the purpose of recording conditions and changes, but we are no less aware of the dreary reading they make and the difficulty of memo-

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rising them. The civic survey has long abandoned this mode of presentation for the facts it is desirable to emphasise in favour of a graphic method employing maps, diagrams, and models, by means of which the eye instantly appreciates the conditions they represent. Thus, by different colours or tones of colour placed on a map, altitudes, density of population, health conditions, rate charges, and other facts can be compared at a glance. In like manner, a scale of colours will indicate the various purposes for which land and buildings are employed, whether woodland or meadow, allotments, houses, shops, warehouses, or industrial or public buildings. Coloured zones show the time or the money expended to reach a given centre from the areas around it. Symbolic signs mark the positions of places of public resort, such as churches, schools, theatres, and hotels, also hospitals, gas and electric works, and other concerns having a general interest. Public open spaces, as parks and recreation grounds, are distinguished from the private ones used for golf and other games, and also from cemeteries and ground permanently open, but not allocated to recreation.

Communications are treated on the same principle, the routes being marked by bands of colour, wider or narrower according to the amount of traffic indicated by a census, or by a model with strips of uniform width, but raised vertically to mark increased intensity. Maps of this kind are supplemented by diagrams enabling growth, output, commerce, and similar factors to be estimated at a glance, and there is, in fact, no limit to the resources of graphic presentation, the value of which, in facilitating a clear understanding of conditions,

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can hardly be over-estimated. To give but one example of possible extensions of the method, we may refer to a model prepared by the town of Gothenburg, showing the existing state in relief, the intended improvements being indicated by superimposed colour.

It seemed best to give an idea of the mode of presentation first, as, though the important matter is obviously the range of study that will be advantageous, an understanding of the form in which this can be shown greatly assists in affording the power to visualise the results in relation to the ultimate town plan. It is here that the statistical tables of former days fail, if not absolutely, at any rate practically, because it is well-nigh impossible to co-ordinate them mentally area by area so as to grasp their bearings on each other, whereas a few maps hung side by side will enable these co-ordinations to be made almost instantaneously.

The first subject for study will be the general topography of the town and its surroundings, which will be illustrated by a contoured map, a geological map, one showing the nature of the surface soil, and others giving information as to watercourses, collecting areas and flow, lakes and reservoirs, and the levels of water in the ground at various seasons. Further maps will show how the ground is occupied, whether by woodland, agriculture, wastes or marshes, and the extent of building and other features modifying natural conditions. In some cases mining activities will have to be considered and shown, particularly where subsidence may be anticipated. Again, it may be of importance to deal with an area ethnologically, zoologically, and

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botanically. Diagrams showing climate, including temperature, rainfall, prevailing winds, and the like, must also be added, and other factors will demand attention in certain cases, such as that of towns in the tropics, so that nothing affecting the ultimate scheme may be left unconsidered.

Next we may look at the town from the historical aspect, and prepare a series of plans showing its gradual growth, at what stages the salient features appeared, and how these, whether they still remain or not, have affected subsequent developments. Old maps and views will be very useful here. Diagrams showing the expansion or lapse of local trades and other activities may be valuable in forming a judgment on the possibilities of the future. Then, economic studies such as these are incomplete without the corresponding social ones showing how occupation has influenced habits of life and thought, on which interesting sidelights can be thrown by records of local customs and views as expressed in the types of recreation, the religious and other observances, and the manner of conduct generally. There are also the more specifically archæological studies comprising records of all ancient sites and buildings, with careful notes as to what remains of them, with a view to their preservation and enhancement in future operations.

Perhaps next in order we may place industry and commerce, the usual considerations that have dictated the location of the town. We shall require diagrams showing the importation of raw materials, with the costs of transport, which will suggest the causes of their coming here in preference to elsewhere. The

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industrial maps will indicate the distribution of the various industries, and will give a clue to the reasons for such a distribution, and supplementing these diagrams illustrating the export and destination of the productions of the town. Then, where the place is a centre of exchange, records of imports and exports can be presented graphically, the whole giving us an exposition of how the town makes its living.

These dealt with, we pass on to consider the people who are engaged in making this living, and where and how they live, which will involve maps of the different classes of housing, distinguishing the good, bad, and indifferent, and of the variations in the type of house and in the status of the occupants. Practically this is the housing section, though it concerns itself not only with the actual houses but also with those dwelling in them, whether they are well-to-do or earning more or less than a living wage, whether any are forced into bad houses who would occupy better ones, or are, on the other hand, obliged to pay higher rents than their income justifies ; generally, whether housing accommodation is appropriate and compares favourably or unfavourably with other places. Comparison with other maps will show how far the houses are well distributed in respect of the occupations of those living in them, or otherwise, and the conditions indicated on the housing maps will demand careful consideration in relation to those in the health section.

It will be well to take next the question of communications, as this not only affects the economic position in respect of industry and commerce, but also the facilities for transit between the residential areas

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and the industrial and business districts. With good communications there will be greater latitude in the selection of areas available for housing and less conflict between the demands of the various classes of transit and transport. With plans showing clearly the routes employed, whether water, road or rail, and the intensity of traffic on these, we shall be better able to visualise whether these are adequate, and, if not, what will most efficiently and most economically supply the remedies demanded.

Next let us take the important section of hygiene, covering the maps to show density of population, the general death rates through a series of decades, and, in like manner, the infant death rates and those for the principal epidemic and other diseases. It will also include diagrams of the average physique in various districts and occupations, the development of children, and the moral standards as indicated by the statistics of crime and misdemeanour. The positions of all remedial institutions, such as hospitals, dispensaries, infirmaries, asylums and prisons, would be indicated, giving the accommodation and the areas and population they serve. Diagrams would illustrate the relative conditions as regards overcrowding, lack of light and air, effect of regulations and by-laws, the character of the water supply, sewerage, sanitation and scavenging, and generally of all services affecting health. In most cases statistical maps will need to be prepared separately for districts, wards, or even smaller areas, in order that the divergent conditions in these may be properly compared, and the causes discovered of ill-health and poor development, whether defects of situation, over-

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crowding, detrimental industries, failures in sanitation, or other disadvantages, and the remedies appropriate to the case put in operation.

It will be convenient to place education and recreation in another group which will schedule the facilities offered, the accommodation relatively to the inhabitants, and the distribution. The diagram plan showing schools should classify these according to the type of education given, as primary, secondary, technical, State-aided, or otherwise, and should include an indication of the extent of playground and garden attached. Parks, playing fields, and children's playgrounds should be separately scheduled, and here again division by districts will be required to show how far the provisions are proportionate to the population. Libraries, baths and public places of entertainment will need another map rendered statistically as to attendances, while theatres and other private halls may be included with these and dealt with on similar lines.

Land values and charges, such as taxation, rating, costs of gas and of electric light and power, lend themselves to graphic presentment on similar maps to those described, while administration demands yet another section indicating the various authorities controlling the different communal undertakings and the areas under their jurisdiction. Only when this is undertaken does one realise the amazing number of authorities exercising special functions in an urban area. Forty is a number that is exceeded in several places, and as their boundaries are by no means coterminous, it is obviously desirable to have maps showing these. Apart from *ad hoc* bodies, such as water boards and

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port authorities, there are curious dovetailings between county and municipal powers, in respect to acquisitions, roads and other matters.

This is but a sketch outline of the civic survey, touching only on its salient features. There are many other aspects having almost equal claims on the investigation which could only be set out in a treatise dealing with this subject alone. The arts, constructive and technical methods, customs and habits of a locality are but a few of the things that repay illustration. These, however, we must leave in order to take up the question of what is to be done with the work of the civic survey when complete. Its value to those on whom the responsibility for the city's future rests is easily appreciated, but unfortunately they, however enthusiastic, can do very little in the directions suggested unless they have the support of the general public behind them. We conceive our authorities to be apathetic, but they cannot go very far in advance of the views of those who elect them, therefore, if the survey is to be of real service, it must be exhibited and advertised to the public at large. It makes by no means a dull show ; well arranged and properly documented, it draws large attendances, as has been proved at Dublin, Manchester and elsewhere, even when the exhibits were only in part of local interest.

What is wanted is a permanent civic museum in every town, with the civic survey forming the key to each section, its objects reinforced by suitable lectures and demonstrations from time to time. Such an exhibition would become quite a popular affair, making the most of all the interests the town possessed.

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The rising generation, more especially, would be disposed to accept it, by reason of the fact that this mode of study is but an extension of the regional ones now gaining popularity as a more vivid way of acquiring knowledge than the former abstractions as set forth in books. When we find the youth of our time being encouraged to seek for themselves a knowledge of what is around them on the lines of the following few extracts, taken from a schedule in circulation among a great many schools, we cannot imagine them finding difficulties in appreciating and interesting themselves in what the maps and diagrams of the civic survey exhibit, especially when are added the actual objects relating to the history and activities of the place that every well-arranged museum should supply.

“What is the soil in your district? Is it all the same?

“How deep does it go, and what is underneath it?

“How do the inhabitants obtain water?

“Are there any woods, marshes, ponds, heaths, or uncultivated lands near you, and what kinds of trees and plants can you find?

“Make a map year by year showing the crops grown.

“What wild animals and birds are there?

“What prehistoric remains are there, barrows or camps, and do you know of anything that has been found in these?

“Make plans of any British camps, Roman camps and roads. Show on a map the position of each village and town, stating what they are, as ports, market towns, manufacturing towns, or cathedral cities.

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“ Find out all you can as to their origin, and make maps showing different stages of development.

“ Make a time chart of notable events in the history of your district.

“ Mark all roads, railways, footpaths, rivers, canals, and other lines of communication.”



39. Bristol Road, Birmingham. An Arterial Road with Central Tramway



40. Birmingham - Colebank Road

CHAPTER XI

Communications

WHEN we come to consider the influence of communications on town planning, and remember the importance of transit by water in the earlier history of city location and growth, we are almost tempted to give it first place among the means of communication to be dealt with, and might do so with justice but for the fact that, with a few notable exceptions, all places have been planned on the basis of land communications, and that waterways, while often affecting location, were incidental to, and not dominating, the more intimate details of the plan.

It is, therefore, better to start with the roads, and to reserve consideration of water routes till we find the artificial development of these influencing lay-out. The chronology of street alignment has already been glanced at in the historical notes, but it demands to be supplemented by an outline of road development in general, in order that we may grasp how the towns have been influenced by this. Such a study not only gives interest to the roads as we find them to-day, but also provides useful guidance as to the principles to be borne in mind in the needed reconstruction of our road system, both urban and inter-urban.

That substantial roads were constructed by the great nations antecedent to the Romans is obvious when we realise their varied activities, but it will serve our purpose, after a brief digression on the prehistoric lines

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of route in our own country, to begin with the technique of road construction as laid down by the Romans.

The earliest tracks we can trace are those of the Bronze period—perhaps some even date from the Neolithic one preceding it—when the tribes of those times determined the best routes by which to move their flocks from one pasture to another. The lower grounds seem to have been densely wooded and the habitat of predatory beasts, so that we find these roads taking the shortest lines across valleys, and following escarpments and hill-tops. Where the natural formation failed to make the line obvious, guidance appears to have been afforded by natural or artificial landmarks. These routes were retained for trade and war, and to serve the early agricultural developments before the advent of the Romans. They were, as we know, distributed in accordance with the use of the land at the time, leaving large districts untouched as unsuited to the activities of that stage of civilisation.

When the Romans arrived in Britain they had already formulated their practice as to roads, and had classified these into five groups : the first, a paved road accommodating two lines of vehicles ; the second, a similar road for one line only ; the third, a bridle road ; and fourth and fifth, narrow ways mainly for the use of agriculturists. The higher-class roads were provided with bridges, culverts, drainage, etc.

The work of organising this country in accordance with the political system of Rome involved the planning of an entirely new system of paved roads, primarily for the movement of troops, but at the same time so complete as to be more than adequate for other requirements.

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As we are aware, these roads were fairly direct in their general alignment and, with a few exceptions, absolutely straight from camp to camp, placed a day's march (about twenty miles) apart. A map indicating all the known roads shows the country well served with routes most skilfully planned, except from one point of view, now of much more importance than at that time, namely, that of gradient, which was obviously a minor consideration with so little wheeled traffic.

While many of these roads have remained permanently employed, large sections of the Roman scheme have gone out of use, and can be traced only by fragments to be found here and there. This abandonment was not connected with any unsuitability in the roads, but was due to the dismemberment of Britain under the Saxons and its only partial reintegration under the feudal system. Not until the sixteenth century did we recover anything resembling the unity of control exercised by the Romans, and even then nothing equivalent to their efficiency in sustained organisation. Of course, with increasing population and production, the country became covered with a network of routes, but many of these were only pack-horse ways, and the art of road-making having lapsed, main routes often fell into a hopeless state where natural conditions were unfavourable.

In the early days of wheeled traffic this became so definitely the case that very circuitous routes had to be taken in bad weather, sometimes involving detours which more than doubled the distance between one town and another. Stone sets were only employed in the cities, and no other efficient mode of road-making being

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known, roads in bad ground soon got so cut up as to become impassable. Where the ground was open, vehicles struck out new tracks till the old had recovered, and so we find in places very wide roads, sometimes subsequently narrowed by intakes.

A number of experiments in road surfacing carried on for about a century finally crystallised into the definite specification of MacAdam, and a reliable surface capable of carrying the increasing wheeled traffic came into general use. With easier and more comfortable transit, travel increased rapidly, and immense numbers of coaches and post chaises sped along our main roads. New roads and improvements in alignment were found necessary, and towards the end of the eighteenth century an era of road building set in which lasted till the advent of the railway.

MacAdam, Telford, and other leading engineers were engaged on this work, and the return for the capital was provided by means of tolls. The primitive type of gate, the "Turnpike," gave the name to these, and the period during which these roads were built has been termed the "Turnpike" age. In the midst of this activity the railroad and steam engine came on the scene, and after a few years of incredulity every one became convinced that the day of the road was over. Roads ceased to be a profitable investment for capital, which was promptly transferred to rail enterprises. Not only this, but on the railroads securing popular favour, railway schemes were often laid out in a manner detrimental to future road development, particularly in the neighbourhood of the towns. Outside the towns, things remained in this position until

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towards the end of the nineteenth century, when the development of the combustion engine as the driving power for road vehicles brought the road into enormously increased use, and demanded a re-consideration of the problems of road planning and construction.

The first of these to arise, that of dust, was not a new one. In coaching days the Bath Road was kept watered from end to end, but a better solution was now found, and without recapitulating the recent history of road-making, it will suffice to affirm that we can now form roads physically and economically suitable for motor traffic.

In town areas also the eighteenth century provided us with good schemes and spacious roads, and much of the subsequent deterioration of these, including encroachments, took place in early Victorian times when the railway filled the public eye. The road plan of London south of the Thames dates from this period, and Great Dover Street is a good example of a by-pass road. Then we see the fine route laid out from the city to Paddington, originally 150 feet between frontages. Edinburgh and Bath may also be quoted as notable examples, but many of our smaller towns retained their mediæval plan, and not even this at its original standard, market-places having been filled in with buildings and the roads having suffered from gradual encroachments, particularly near the busy centres.

Our latest roads are now being dealt with by two methods. Road systems are being framed under town planning, or, more comprehensively, under regional planning schemes, while large arterial roads are being

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planned and constructed to connect towns at a considerable distance from each other.

In the first case a careful study has to be made of the existing roads, their use, their adequacy, and their connections. The trend of development has also to receive consideration, and the new road pattern built up on these factors, providing for the relief of over-charged routes, safety at junction points, and a free movement of traffic between industrial and residential areas, so that the business of the district may be carried on without the handicap of inadequate communications.

In the second case, the determining factor is mainly the economics of transport, whether a road service can operate advantageously as against the existing railway facilities. Per ton mile the road is at a disadvantage, but this may be outbalanced by economies in transshipment and terminal collection and delivery. For the shorter distances, and for some classes of goods, the case for the roads may be regarded as established, but for distances of 100 miles and over it is possible that further investigations are needed before such roads can be justified on economic grounds. Undoubtedly a good case could be made out at the moment, but the railways are short of plant, and it is also questionable if they are working at a maximum of efficiency and a minimum of profit, as they might be capable of doing in competition with an alternative mode of transport.

In order that these main arterials should answer their purpose, their design would have to take, in some measure, the character of the railway, by going over or under important cross routes and by by-passing inter-

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mediate towns and villages so that these connect by means of short branches. They can only, to a modified extent, be regarded as developing the districts through which they pass.

The regional and local roads, on the other hand, must be designed to provide for the development of the adjacent areas and must therefore follow, as closely as possible, the natural levels, embankments and, to some extent, cuttings making it difficult to use front-ages for building purposes and awkward to arrange the connections with side roads. Therefore the alignment of these in hilly ground must needs be governed by the contours. Where an arterial road is brought into a regional system, it is often worth while to provide sufficient width for a central and two side roads, the latter for the local traffic, thus reducing the number of crossings on the central road and allowing these crossings to be placed out of line with the openings into side roads. The regional plan is prepared in diagram form, giving the traffic routes demanded, and then, after the road lines have received such modifications as the formation of the ground and the disposition of industries and properties prescribe, there remains the important question of road junctions. On the design of these a great deal depends, both in regard to smooth working, with a minimum of supervision, and freedom from danger points. Where main routes cross each other ample space should be provided, and no building or other obstruction to a clear view extending to a radius of at least 40 yards from the crossing point should be permitted. But such crossings ought to be eliminated as far as practicable, and it is better that

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subsidiary routes should enter and leave the main one at different points, say about 100 yards apart, while the small branch road is better with a funnel mouth and central island so as to check the speed of traffic coming into the main route. Where a record of accidents is kept, many of these are found to be due to excessive speed when emerging from a side road, either with the intention of directly crossing the high road or of turning to the right along it.

In planning these regional road systems it will often be found that the existing railways add greatly to the difficulties in regard both to levels and the cost of bridges. It is, in this country, practically impossible to obtain any modification in the level of a railway, or any bridge reconstruction otherwise than at the cost of the local authority. The law in this respect operates most unfairly. If eighty years ago a railway company provided a little bridge over a country lane, and this lane has now become a busy highway, there is no power to compel it to rebuild this bridge in accordance with the increased needs, though the railway has secured its share of the expansion of business that development brings about.

The U.S.A. is very much in advance of us in this matter ; not only can the authorities demand a reasonable alteration in the rail level, but they can also claim a proportion, which varies in different States, of the cost of bridge building and road grading. One may safely say that, but for these enactments, very little of the work done towards eliminating level crossings in American towns would have been accomplished.

We have so far been considering areas in course of

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development, but we must not overlook the traffic congestion in our great cities and the possible remedies for this.

Motor transport has at least doubled the capacity of our streets, and, if all the traffic could be carried on at the uniform higher speed of the motor, there would be a still further gain. The abolition of the horse-drawn vehicle has been frequently advocated, and although this must take place sooner or later, it is still felt that too great a hardship to certain classes of business would result from it. An intermediate course is open, namely, the exclusion of the horse from the main roads, but this would involve a degree of supervision that renders it economically doubtful. It may be assumed that for the moment neither of these alternatives is likely to meet with acceptance.

To take London as an example, it has, from the traffic standpoint, the advantages and disadvantages of an old city. Like all places whose expansion has been long continued, the general lines of route are the natural ones and appropriate to traffic requirements, but, on the other hand, many of the more important roads are no longer adequate to the demands now made on them, and at the crossings of the principal routes the delays are particularly accentuated. Moreover, the general plan being framed on a limited number of main roads with large areas in between, laid out with a view to excluding traffic rather than encouraging it, the old arteries are overworked. Heroic efforts at improvement have been made from time to time; during the nineteenth century many important streets and street widenings were carried out, not always very successfully

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because of the obsession at that time in favour of connecting to existing ganglia, such as the Bank, Piccadilly Circus, Charing Cross, and Victoria, which have now become points at which it is most difficult to devise an orderly system.

We are only just beginning to appreciate the value of "one-way" routes and the "gyratory" system, both of which have proved useful in a number of cases in other countries, and, though London affords fewer opportunities for employing these remedies than cities laid out on a larger scale, there are, nevertheless, quite a number of streets where one-way traffic could be adopted with advantage and where it could be put in operation quite simply; but the employment of the gyratory system, which would be of the greatest value at important centres, is not such an easy matter as might appear. To allow this to work smoothly there has to be some little distance between each of the roads opening into the circulating route, and many of our central ganglia are too small for this. The alternative is the inclusion of one or more blocks of buildings within the line of circulation, thus giving this the character of a "one-way" traffic route.

Incidentally, it is worth noting that the annual cost of each post where a policeman is on traffic duty amounts to something over £450, and that, as every simplification would diminish the number of these posts, there would be a definite saving under this head in addition to that due to acceleration. These savings would help to balance the cost of such street improvements as would in some cases be essential to provide for a workable scheme.

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But roads are not the only form of communication, and if we turn back to the time before the railway era, when the demand for economical transport was met by the improvement of natural waterways and by artificial ones linked up with them, we see that the Romans made canals and even started to cut the Isthmus of Corinth, that in Venice the canals followed the original tidal channels of the lagoon in which it was built, and that in later times the necessity for canals in the reclamation schemes of the Netherlands brought them into general use there and demonstrated their utility to the neighbouring countries. In England the first canal was cut early in the eighteenth century, and from this time onward private enterprise was gradually covering the country with a network of water routes, when the advent of the railways put an end to these efforts. In France and Germany, where canals were national undertakings, these being on a larger scale and more efficiently co-ordinated have maintained their position better, and few have been abandoned, a fate which has befallen many of the smaller navigations in England.

In the United States also many canals were cut about the beginning of the nineteenth century, but these also became obsolete, and at the present day the only type of water route which is regarded as worth undertaking is that planned on a scale to accommodate sea-going ships, as, for example, those at Suez, Panama, Manchester, and that linking up the great lakes in North America. At the same time, inland water transport is still of considerable importance, and the development of inland ports has materially affected the

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planning of many towns, more particularly in the Rhine provinces, not to speak of the example we can claim at Trafford Park, Manchester. London itself is still encircled by the Regent's Canal north of the Thames, and penetrated for a considerable distance by the Surrey Canal on the south side. Dublin has an encircling canal both north and south, and several of our inland towns are materially affected in their planning by the waterways that pass through them. Whether future conditions will produce an enhancement of these facilities or the reverse is uncertain, but where the scale of operations is capable of expansion there seems little doubt that waterways will still retain an important place in our scheme of organisation.

Though railways are not at present technically included within the scope of town planning, it is obviously out of the question to exclude them from its programme in view of their importance in respect of organisation and amenity. It has been most unfortunate that, on account of the extraordinary difference this form of transit made in the speed, comfort, and economy of travel, it was soon accepted with such fervour that permission was readily granted for operations now seen to have been extremely detrimental. Embankments and viaducts have wrecked the orderly plan of many town areas, and have made good planning impossible in many suburban ones. Public open spaces, such as the Surrey commons, were allowed to be cut up by railway routes without compensation, and it is only quite lately that railway proposals have been opposed on the ground of their affecting the amenities. It is easy to understand that at the experi-

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mental stage, when encouragement was needed, large concessions should have been made, but this attitude was maintained long after it ought to have been abandoned, and the railways were allowed a freedom only permissible on the ground of economy, but which has often been exercised with no such justification. Indeed, on the other hand there has been, and there is still going on, a great deal of extravagance and waste in construction owing to the lack of a co-ordinating authority to control competitive activities.

The suggestion has been made that in the towns no railways should be allowed to be carried at a level above that of the streets, and though this would certainly remove the extraordinarily ugly bridges that our engineers seem to delight in, overhead lines may be admissible if skilfully planned and carried out with due consideration to the artistic effect. Moreover, we have no right to ignore the railway traveller in favour of his brother in the street, though the railways themselves have always taken this attitude. If it is a question of outlook, the man in the train has his claims, and one can call to mind many fine views of city and country that, if not seen thus, would never be seen at all.

Hitherto both parties have been to blame, the railways for disregarding the harm they were doing to the districts they ran through, and the planners and builders for disregarding the railways and taking no care that a presentable face was made to them. The course adopted at Port Sunlight of running a road along the side of the line is an unnecessarily extravagant one, as there is no reason why the backs of houses should present any worse appearance than the fronts,

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and common sense would place them at sufficient distance from the trains to allow of some planting and gardening between. Given this, there is no reason why the railway front of a house and garden should not be just as good to look on as the street front.

Then, again, we have serious cause of complaint against our railways for their neglect of the areas around the large termini, and the purely utilitarian way in which these are handled. Both the Continent and America put us to shame in this matter, and it may be doubted if even the excuse of economy may be pleaded when we see the degree of confusion and hustle which the haphazard arrangements now general provoke. The fact is that the monopolies granted have encouraged incompetence, and railway practice is in many respects obsolete compared with the possibilities clearly visible to those who have been trained to take a wide view of civic organisation. One example only need be mentioned as an illustration. About the same time two large termini were planned, one in New York and one in London. At the first the incoming and outgoing passengers are given separate routes between street and platform ; at the second no attempt is made to separate them. The difference in capacity and smoothness of working can easily be imagined. Not until the railway element is brought within the scope of town planning schemes shall we be able to secure the co-ordinations required.



41. The Industrial Quarter of Reading



42. Southampton. An Aeroplane Map

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CHAPTER XII

Allocation of Areas

THE allocation of areas to the purposes for which they are or may become most suitable has, for reasons of brevity, been given the title of " zoning," though the form these areas take can only occasionally approximate to that of a series of belts or zones. At times regulation may be on these lines, as in the case of some German and American towns, where the heights permitted are gradually diminished, starting from the centre and proceeding towards the outskirts, but in the case of varied utilisation, as for commerce, industry, and housing, clearly the character and suitability of the ground must dictate the use to which it is put, rather than a merely diagrammatic relationship to a given centre.

In taking a glance at the conditions general in our cities as they are at present, we find administrative and business premises usually in possession of a central position, with industry and commerce stretching out from this in one or more directions, and residential quarters in others, commerce seeking a place where rail and water transport is available, and residences the areas most attractive and accessible. This broad generalisation is, however, very greatly qualified in practice, as industry and commerce draw into the interstices of their quarters a great deal of housing for the workers employed, so that these may be close at hand ; while industries less dependent on transport distribute themselves among the residential districts.

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Thus, instead of a defined scheme of production, transport, and distribution, we see only a blurred travesty of such an organisation. Much of this has doubtless been due to lack of adequate provision for transport and transit, which, instead of being planned in advance, has been improvised to cope with demands after those have made themselves evident. This being the case, it is not often possible to do all that might be desired for our existing towns, which can only be regarded as illustrations of certain forms of failure to be avoided in planning for the future.

In laying down principles for zoning we must bear in mind that it is impossible to predict the future with absolute accuracy, and therefore alternatives in utilisation should be admitted to the maximum extent compatible with the validity of the scheme as a whole, so that in many parts more than one type of occupancy may be allowed. This is, however, a long step in advance of the latitude formerly customary, which has left us with so much confusion in our towns, detrimental from the aspect not only of health and amenity, but of economics as well. Large areas of low-lying ground are covered with houses, and the smoke from factories on the neighbouring riverside streams over them, while elsewhere big industrial concerns have had to abandon their works because the ordinary road communications on which they relied have become obsolete.

There are a few main factors which, if borne in mind, will enable us to visualise the lines on which a town can profitably develop, and though much more intimate study has to be given to the special circumstances of each case before zoning regulations can be safely laid

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down, these will suffice to give a general idea of the differences that such regulations have in view.

The business organisation will necessarily retain its central position, and we must bear in mind that in a growing community it must also expand, and will probably do so by increased height in the buildings and by extending into adjacent areas occupied by residences or factories, a course not without its advantages, as it is usually the older and obsolescent houses and factories that go. These movements are, however, of less import than the continued demand to add accommodation by increasing the height of business premises, which, if acceded to, would intensify the traffic, and as the existing communications are often inadequate, it is essential that an appropriate limitation should be maintained.

Passing on to industrial and commercial organisations as carried on at the present time, we see that these demand good transport facilities, the ordinary road access being only suitable for those that are relatively small in their scope, or which handle light material only. Where there is navigable water, many will want frontages on this, and water is also useful in connection with some manufacturing operations. Direct rail transport is also essential to large concerns, and this is more easily organised on the flat ground to be found at the lower levels, which is undesirable for housing purposes, so that we have good general guidance in this respect.

We are, therefore, enabled to reserve the higher ground for residential purposes, and if this is irregular in its conformation it will lend interest to the lay-out, with the advantage that any too steep to be built on

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with economy can be planted and developed as strips of park with pleasant walks, breaking up the monotony of large areas of building.

While everything else favours a marked separation between large industrial undertakings and the workers employed therein, it must not be forgotten that, if we segregate these two groups, convenient and economical means of transit must be provided between them, and this demand will have to be satisfied before any scheme of zoning on these lines can be accepted. Whatever the other merits of such a scheme might be, it would not be popular if an undue expenditure of energy in getting from one part to another were involved. Apart from the considerations of amenity and health, one of the main objects of zoning being to simplify and improve organisation, no scheme could be justified that failed in this respect.

There are still other matters that remain to be dealt with, such as the allocation of areas peculiarly suited for use as parks, recreation grounds and allotments, the best position for shops and the minor industries, like laundries and garages, which are needed in residential districts. It is possible to go even farther with advantage and define sites for churches, schools, etc., but this degree of detail is only likely to be of value where there is an immediate development in view.

The claim of town planning to include in its scope powers of this nature, though now accepted in principle, has probably aroused more antagonism than any other feature in its programme. It is felt to be subversive of the freedom of the individual to do what he likes with his own, and has affected two classes more

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accustomed than others to have unfettered initiative, namely, the landowner and the industrial leader. It would have made little headway had not the lines of procedure laid down provided for consultation with these, thus affording the opportunity for criticism and of meeting any valid objections by judicious modifications. It is easy to realise why in this country, less subservient to State controls than most, the system of zoning has made less rapid progress than elsewhere, and is still limited to areas not yet developed, whereas in Germany and the United States it extends to towns as a whole. As might be imagined, it was in Germany that the idea originally took shape, when in 1884 Franz Adickes, then burgomaster of Altona, prepared a zone plan for that town. Other German towns followed suit with schemes governing height, character and density. In America the city of Los Angeles was the first to pass a zoning ordinance in 1909, and in a large number of American towns similar regulations are in force. Those adopted by New York in 1916 were of a comprehensive nature, and have met with general approval in that city, and it is claimed that they have effected savings amounting to many millions of dollars. In St. Louis the ordinance is said to have resulted in a very noticeable stabilisation of values in several residential areas which, previous to the adoption of the system, were declining or showing a tendency toward depreciation.

As we have mentioned, the provisions of this kind included in the Town Planning Act of 1909 were much less comprehensive, but even for what they are, two instances may be quoted illustrating their utility in checking disorganised growth. Birmingham began by

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prohibiting any dangerous, noxious, or offensive trade to be carried on except on lands already so used or appropriated for the purpose ; otherwise no specific factory area was set apart, but no factory or building other than a dwelling-house could be built anywhere in the town-planned area without the consent of the corporation. Manchester, in its scheme for the southern area, set aside a portion where any type of factory can be erected subject to the approval of the corporation as to the manner of erection, height, elevation and character of building. Factories in other parts of the area will only be permitted subject to certain restrictions.

It may be confidently predicted that the regulation of the growth of cities on considered lines, such as these, will effect an enormous improvement in their future efficiency, and it cannot be long before an appreciation of the necessity for control in this matter will bring about an amendment extending these powers to the occupied areas. It need not be assumed that in such an event established interests will be much interfered with ; this is hardly likely, but occupied areas are today changing their character in all our large towns, and guidance is urgently needed to ensure that such changes shall take place as part of a movement clearly defined in accordance with a comprehensive programme and not in a piecemeal and haphazard fashion.

When this stage is reached those whose interests give them an influential position in civic affairs will perforce have to take part in shaping the city's future instead of standing aside from municipal activities on the ground that these are not of sufficient importance to be worth

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their attention. In past times the services of the ablest citizens were devoted to these activities, and though at the moment their claims in this respect seem to have been in a measure forgotten, there are signs that the expansion of civic control is bringing about a more general realisation of civic responsibility.

CHAPTER XIII

Planning for Commerce and Industry

HITHERTO industrial concerns have had a fairly free hand as regards the selection of sites, and while the positions chosen have often been injurious to the community as a whole, they have usually been taken up with a view to advantages of one kind or another in relation to the operations contemplated. With the restriction of this freedom, so essential from the town planning aspect, it becomes the more necessary to ensure that the areas allocated to industrial purposes shall be such as will enable these to be economically and profitably carried on, and that they can be apportioned in sites suitable for the classes of industry likely to be in demand.

It has been suggested that this question can be appreciated with greater clarity if the operations of industry be subdivided into their constituent parts, including most of those that fall under the head of commerce. Beginning with what is termed "raw material," we have first the processes by which this is won or gathered, next its transport to, and reception at, the place where it is to be worked on, and possibly a period of storage there ; then the manufacturing processes, which may be the complete series to the finished article, or only a partial one preparing it to be passed on elsewhere, as in the case of a smelting works or a tannery ; then another period of storage and the distribution of the finished or partially finished article.

The appropriate relationships between all these

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operations demand consideration, and where the assembling of various constituents or the provision of power comes into the account, it is often a question of great nicety in economics as to which factors are to dictate the location, whether ore is to be brought to coal or coal to ore, whether material to power or power to material, and the successful prosecution of an industry will be found to depend not alone on facilities in respect of material nor as to ultimate markets, but on a balancing of both these factors, together with others, such as competing demands for labour, climatic suitability, etc. Thus we see that the task of the industrialist is no easy one, and when his requirements have to be understood by the town planner, this aspect must needs take an important place in his studies.

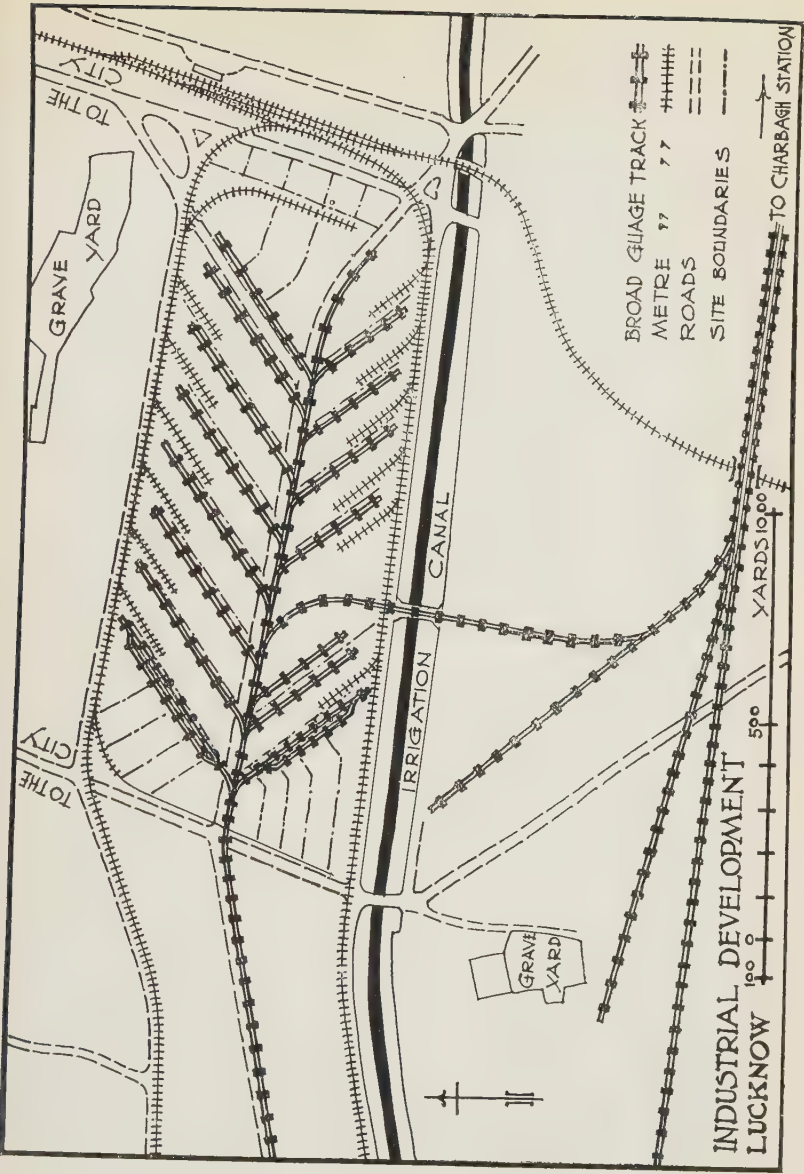
Bearing this in mind, the wisdom of planning industrial areas with as much flexibility as possible will be recognised, so that provision will be made alternatively for smaller or larger undertakings, with lines of communication spaced out so that supplementary ones can be formed when the actual allocations are defined. Where there are valuable water frontages, these should be economised as far as the character of the industries permits, and a good depth given to sites so situated, as in most cases there will be certain branches of the work not demanding proximity to the water front. Where the principal means of transport is by rail, the planning requires care in providing that sidings can be carried to the necessary points without undue waste in arranging curves. To effect this it is often best to align the sites obliquely to the railway route, so that the sidings may be run into them without

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too long a curve. A portion of the plan of the industrial area of Lucknow illustrates this ; here there was the added complication of two railway services of different gauge, the narrow gauge bringing most of the raw material, the broad gauge bringing the fuel and also receiving the bulk of the finished product.

In no city does the difference between good and bad planning so seriously affect the economic welfare as in the large commercial seaport, and it is here, owing to the rapid advances made in marine construction and transport methods during recent years, that the greatest activity has been found necessary to keep pace with the progress made. Many of our wharves and docks, together with their plant, are obsolete, both in scale and efficiency, and it is only occasionally that their position renders the solution possible that has proved of value in Liverpool, where several important office buildings have taken the place of one of the older docks. Though the course taken in this case can hardly be a usual one, it seems likely that in London and one or two other places where the demand for an enlarged business centre is pressing, extensions may be secured by the abandonment of the older docks, which are outgrown by the shipping of the present day.

The planning of new docks is dictated by the class of trade and the size of the vessels accommodated, the former determining the proportion of land area and the arrangement of the warehouses and shore communications, the latter the scale and design of the water areas. It may be imagined that these engineering questions are outside the range of town planning, but experience has shown that the arrangement of the docks or



43. Lucknow. Industrial Development



44. Liverpool. A Commercial Centre taking the place of an Oldest Dock

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wharfage is the most vital factor in the extension of a sea port, and that efficient planning would be impossible were this excluded. The physiography of the site must influence to a large extent all planning of this nature, but, apart from this, port organisations divide themselves into two types, each of which has its subdivisions.

Where the tidal variation is small and the position sheltered, the port may be open to the sea, but where it is considerable the scheme almost always takes the form of enclosed docks with locks and gates. Quite frequently accommodation of both types is provided. The two main variations of the open port give wharfage parallel to the shore, running the length of natural or artificial frontages, and, alternatively, a series of piers at right angles to the shore line, the first and older type being more general in Europe and the second that usual in America. Enclosed docks exhibit similar variations, as in some the ships lie along the walls of the dock, and in others along jetties projecting from these walls. Formerly these jetties were placed at right angles to the wall, but an oblique position is now found more convenient for manœuvring ships and in giving more economy in the space taken up by railway sidings, just as in the oblique arrangement already described for factory sites.

The special planning for port areas in the way of sorting sheds, storage, elevators, bonded warehouses, and the like does not call for consideration here, as, when the general lines of development are settled and the necessary areas allocated, this will pass into other hands, but outside these areas the lines of access and

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communication still remain to be dealt with, both in regard to the service of the port and to that of the sites in proximity to it. These sites will in most cases be of eminent value for industrial purposes allied to the commercial interests, and it will thus be of the utmost importance that, apart from the lines of communication by road and rail between the port and its "hinterland," there should also be, distinct from these as far as possible, transport facilities between it and the surrounding sites occupied by important industrial concerns. In former times these were often served by inland canals running from the port, and railways now do most of this work, but it is a question if these might not be supplemented by overhead transport, such as travellers or rope lines serving large works, when in proximity to the port area.

Port undertakings being as a rule on low-lying ground, it is probable that, avoiding the bad practices of the past, we shall only find sites suitable for housing the workers at some distance, leaving us free to organise the zone immediately around the port for appropriate industries, and arranging to bring the employees from some more desirable places in the district by a rapid transit service. Such a form of organisation is obviously demanded both north and south of the Thames estuary, and also along the Tyne, the Tees, the Dee, and several other rivers. The lay-out of the communications for transit demands careful study, not only to avoid conflicting with those for transport, but also to give such routes as may be economical in working and, at the same time, so unified as to provide varied routes according to the requirements of the workers. The

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housing of the workers in each group of docks and works at the nearest appropriate point, with a direct connection between these, sounds a simple solution, but it is not an adequate one, as members of a family may work at different places, and workers may change their place of employment without wishing to move their homes. Some compromise between direct routes and a circulating one will probably best meet the circumstances of the case.

There are other difficulties associated with industrial operations which must not be overlooked. It is only here and there that sites are by nature too irregular or too steep to exclude development, but where the ground has been quarried or excavated for gravel or clay it is usually left in such a state as to be useless for any economic purpose. The owners obtain their royalties, and sometimes compensation in addition, but this is rarely expended in restoring the levels, and when the town extends to these areas the desired communications and planning are found to be impossible owing to the prohibitive cost. They might often be reserved as open spaces, and even made quite attractive with pools and walks, but a fictitious value being usually placed on them, with the idea that restoration may be ultimately justified, they remain in the meantime an obstacle to good planning. It is essential that a definite programme should be laid down in respect of these activities, permission only being given conditionally on the restoration of the land to a state capable of use or handed over to the authorities at a nominal figure to be adapted as permanent open spaces. In either case the further provision must be made that necessary lines

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of communication are not interfered with, or, if this is too inconvenient, are subsequently restored.

Similar provisions are desirable in the case of the huge mounds resulting from mining or smelting operations. These have done much to destroy the few amenities which remain possible around our industrial centres, and while we must guard against regulations so severe as to preclude the economic pursuit of these industries, it is only too obvious that the recklessness hitherto habitual must give place to a more considered treatment of these artificial hills. Fortunately it is now found practicable to shift the spoil in coal mines into the worked-out portions, thus diminishing the subsidences and also limiting the surface mounds, while a use has been found for the material from slag heaps in the metalling of our arterial roads. So far, however, the reduction of these mounds is not keeping pace with their increase, and we have an unfortunate legacy of areas destroyed by them in former days. Where it is still unavoidable to form deposits of this type, the surface soil should be removed and reserved, the deposits should be kept as uniform and level as possible, with provision for grade approaches, and the whole undertaking so organised that some degree of restoration is subsequently practicable, by tree planting or such other operations as could be undertaken where the surface was approximately level. The employment of cable transport, which is now tending to take the place of rail trolley lines, gives more flexibility to the mode of deposit, making it easier to distribute the spoil in a less destructive fashion.

Apart from this, the problem of mining areas is one

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that makes exceptional demands on the efforts of the town planner. Owing to the increased depth of the more recent mines, the workings extend over a larger area, reaching to a radius of two miles from the shaft, and being on this scale the mining village is correspondingly increased in size. On this point we may quote Professor Abercrombie, who has written as follows :—

“The natural tendency of coal working on a comparatively level site is to distribute growth in a series of communities more or less attached to each pit. But the pit-head village, however well designed and cut off or screened from the pit, is not the ideal unit. It possesses the drawback of too great a similarity of social structure and consequent narrowness of interest. The Garden City, it will be remembered, always contemplated the existence of varied factory, business and agricultural life, combined, in the two cities so far attempted, with a strong infusion of purely residential leaven. A new coalfield, perhaps, does not offer the same attraction to energising personalities to settle there and philosophise, as does for example Letchworth and Welwyn. There is also the important factor of size ; the Garden City movement rightly deplores and attempts to prevent the creation and continued growth of huge towns ; but in the other extreme, villages of 5,000 inhabitants or so are under very severe limitations for learning, art, amusement, shopping and general business.”

To counterbalance the drawbacks mentioned, he suggests that the development of a central town should be encouraged either with good transit facilities to the various pit-heads, a course which he regards as appro-

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priate in the new East Kent coalfield, or else the forming of a focus around which the villages are grouped, in the way the Doncaster area is already shaping itself.

When we review the industrial possibilities of any country as a whole, it becomes clear that the exploitation of these exercises a preponderating influence on the problems of development, and determines the general distribution of the population and, to a large extent, the commercial organisation. The survey of national resources, present and possible, is essentially the fundamental preparation for all future planning, not only around the existing towns, but of the country as a whole, so that every likely expansion of the industrial activities may be adequately provided for, as a portion of a general scheme with appropriate co-ordinations in all its aspects.



45. City of Dublin. New Town Plan by Abercrombie, Kelly and Kelly



46. The L.C.C. Estate at Becontree. Modern Housing

CHAPTER XIV

Housing

THE question of housing is fundamental to town planning. We have seen that this art may have been said to have begun with the demand for a house of two rooms instead of one, and ever since the type of house has been the main influence determining the layout, the area to be covered, and the spacing of the streets. At the same time we must not ignore the fact that occasionally changing conditions have reversed the process, and the house has then been compelled to adapt itself to the area available and to grow vertically instead of horizontally, as aforetime, to subdivide itself into tenements, or to combine into aggregations.

These adaptations have been the cause of most of the "housing problems," which predate time historic. In Asian and African villages man builds his own domicile just as he would cook his own dinner; it is a domestic matter, and he constructs what he wants as far as his means permit, and usually secures what he regards as appropriate. So long as such structures can be placed in "open formation," no great evil results from their relatively unsubstantial character. It is only when they begin to get packed closely together that danger from fire and from lack of appropriate sanitation comes to be felt. This is clearly exemplified in India, where in case of plague the inhabitants are moved to camps of isolated dwellings from the denser agglomerations of the mud-built houses that have been penetrated by the infected rats. These more primitive

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types of building were no doubt general in all ages, when only the aristocracy of the day was able to secure a large share of the advantages that the civilisation of the period could offer. In the plains of Mesopotamia, in Egypt, and even in Greece and Italy, the depressed or enslaved classes had nothing better, while it was only by slow degrees that in mediæval times the standard was raised, and the building craftsmen took over the work of providing homes for the poorer classes. Thus we find Harrison as late as 1577 remarking :—

“ And yet see the change, for when our houses were builded of willow, then had we oken men ; but now that our houses are come to be made of oke, our men are not onlie become willow, but a great manie, through Persian delicacie crept in among us, altogither of straw, which is a sore alteration.

“ Now haue we manie chimnies ; and yet our tenderlings complaine of rheumes, catarhs, and poses. Then had we none but reredosses ; and our heads did neuer ake. For as the smoke in those daies was supposed to be a sufficient hardning for the timber of the house, so it was reputed a far better medicine to keepe the goodman and his familie from the quacke or pose, wherewith, as then, verie few were oft acquainted.”

While in London, then as now by far the largest city in England, we may see by some of the regulations of Richard I. that substantial building was only at that time (1189) becoming general.

“ When two neighbours shall have agreed to build between themselves a wall of stone, each shall give a foot and a half of land, and so they shall construct, at

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their joint cost, a stone wall three feet thick and sixteen feet in height. And, if they agree, they shall make a gutter between them, to carry off the water from their houses, as they may deem most convenient. But if they should not agree, either of them may make a gutter to carry the water dripping from his house on to his own land, except he can convey it into the High Street.

“ They may also, if they agree, raise the said wall as high as they please, at their joint expense, and if it shall happen that one shall wish to raise the wall, and the other not, it shall be lawful for him who is willing, to raise his own part as much as he please, and build upon it, without damage of the other, at his own cost.

“ And if any shall build his own stone wall, upon his own land, of the height of sixteen feet, his neighbour ought to make a gutter under the eaves of the house which is placed on that wall, and receive in it the water falling from that house, and lead it on to his own land, unless he can lead it into the High Street.

“ Also, no one of two parties having a common wall built between them, can, or ought, to pull down any portion of his part of the said wall, or lessen its thickness, or make arches in it, without the assent and will of the other.

“ And if any one shall have windows looking towards the land of a neighbour, and although he and his predecessors have long been possessed of the view of the aforesaid windows, nevertheless, his neighbour may lawfully obstruct the view of those windows, by building opposite to them on his own ground, as he shall consider most expedient ; except he who hath the windows

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can show any writing whereby his neighbour may not obstruct the view of those windows.

“ Whosoever wishes to build, let him take care, as he loveth himself and his goods, that he roof not with reed, nor rush, nor with any manner of litter, but with tile only, or shingle, or boards, or, if it may be, with lead. Also all houses which till now are covered with reed or rush, which can be plastered, let them be plastered within eight days, and let those which shall not be so plastered within the term be demolished by the aldermen and lawful men of the venue.

“ All wooden houses which are nearest to the stone houses in Cheap, whereby the stone houses in Cheap may be in peril, shall be securely amended by view of the mayor and sheriffs, and good men of the city, or, without any exception, to whomsoever they may belong, pulled down.”

We know that at the time of the Great Fire London was still largely of wooden construction, and it is hardly to be doubted that the idealistic provisions of 1189 in regard to the construction of stone division walls had only been accepted to a limited extent. There were at least two reasons for this : firstly, stone is not plentiful near London, while its substitute, brick, did not come into general use till three centuries later ; and, secondly, valuable space would be lost by the substitution of a three-foot wall for the comparatively thin timber framing it was intended to replace.

We can further judge of the general scale of buildings in the twelfth century by the reference to sixteen feet as a probable height. Clearly no more than two stories was then the rule, and this in the metropolis ; elsewhere

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it is hardly likely that a large proportion of the buildings was of more than one story. The characteristic mediæval street, with its tall and overhanging façades, irregular projections and steep-pitched roofs, such as Gustave Doré loved to emphasise even beyond the possible, was the growth of later times, when the city, still packed within its defensive wall, was impelled to develop vertically through being precluded from extension laterally, resulting, as has been mentioned earlier, in the type of city we now recognise as representative of this period.

It was not the natural adaptation of means to an end, but the tradition of the tall house on a limited site that dictated the form of town houses during the seventeenth, eighteenth and nineteenth centuries, and it was the designer's endeavour to justify this height that led him to group them in blocks and treat the whole as a unit simulating a palace, by the employment of detail borrowed from Palladio and those other Italians, the authors of the genuine palaces of the Renaissance.

The standard of the closely built city having been thus established, it has remained with us ever since, and its one claim to merit, namely compactness and shortening of distances, has been given undue weight in the balance against its numerous defects. This is, moreover, not the end of our heritage from the Middle Ages in respect to housing. The one family one house type, from which all communities start, has at various periods been driven to give place to the tenement block housing a number of families. We find it in ancient Rome, and in the East at the present day, antagonistic though it be to the Eastern ideal of family life.

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In Europe it has generally arisen out of changes in conditions or of fashion that have drawn the well-to-do away from extensive blocks of large houses and left them to those who could only afford to rent them piecemeal. We see that this has taken place in London, in Dublin, and other large towns, while on the Continent this tendency appeared still earlier than here, Paris and many other cities affording us examples with which Edinburgh may be classed with these as being at least a century ahead of similar developments in England. As an improvement on this accidental form of housing, we come next to the block planned for the purpose of providing a number of houses. Such blocks seem to have been erected by the Romans where conditions dictated this course ; they reappear on the Continent and in Scotland during the seventeenth and eighteenth centuries, but not until the nineteenth in England, and even then for a long time only reluctantly as an expedient for housing the very poorest. Flats for middle-class residents, long accepted elsewhere, hardly existed in London before 1880, and for some two decades after this were usually designed to simulate the appearance of private house as far as possible.

Of course the tenement or flat planned *ad hoc* has clear advantages over improvised subdivision, and London suffered from its conservatism, many being housed in a fashion of which Dublin presents the only exact equivalent. If we grant the necessity for residential flats, it is important that they should be as skilfully designed as possible, and of late years it may be claimed that this has been effected, but there are yet many English towns of medium size where their utility is

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still repudiated, in marked contrast with the Scottish ideal, which dictates the building of tenement blocks even in quite small places.

It may perhaps be felt that these considerations are somewhat remote from the subject, but the influence of the type of dwelling on the character of a town demands their inclusion before we pass on to the aspect of town planning as affected by housing standards.

Having reviewed at sufficient length the trend of housing development in the past, it will now suffice to look at our towns as they stand at the present day, and here a marked contrast is evident between those of the Continent and those of our own island. While the buildings in the large Continental cities average four or five stories in height, in ours the larger proportion of the area is covered by houses of two stories only, the appropriate height of the one-family house for nine people out of ten. We know, of course, that the impressive masses of buildings we see abroad are divided into small and, to our mind, not very comfortable dwellings, but, none the less, they create an impression of ordered dignity lacking in our towns at home. Even though we may be inwardly convinced that our own arrangements are preferable, we are yet so far dominated by the tradition of what a city should look like as to feel that the Continental town corresponds to this more closely than our own widespread ranges of small homes.

If we determine to study the housing question on its merits we must free ourselves from all obsession as to past standards in the characteristics of a town. We have been accustomed to get our impressions from the imposing houses of the wealthy in our own country,

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and from such houses, reinforced by massed buildings simulating them, elsewhere. In these days the demand for the large town house has practically ceased, and the alternative before us is either to substitute the flat or tenement block or to reconstruct our plans so as to make it possible to occupy wide areas with cottage residences. On the Continent the former alternative is the one most generally accepted ; with us the second remains the more popular ; but, as a result, our large towns are becoming increasingly difficult to organise, and only the acceleration of traffic has made it possible up to the present. One of the strongest arguments of the advocates of the garden city has been the undesirability of unlimited expansion, and in view of the depressing effect of mile after mile of small houses, there is a great deal to be said for the substitution of " satellite towns " and detached suburban villages, which are, from both the hygienic and the social points of view, preferable to the extended " agglomeration " and more in consonance with our national temperament. To encourage these we need improvements in the planning and working of our systems of transport, but there is every hope that these will be effected, not perhaps as fast as is desirable, but possibly in time to afford a fair chance for the required revision in the mode of providing for massed population. We recognise now that mere extent adds nothing to the dignity of a city, indeed rather the reverse, as even where from time to time we may meet with salient features, a deadening impression on the mind is bound to be created by vast areas of houses that cannot reasonably be expected to exhibit much variety in type.

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At this point a brief note on housing, as it has influenced the welfare, apart from the appearance, of many of our larger towns, is desirable. For many decades the lack of adequate transit facilities resulted in houses being packed together in limited areas conveniently near to business and industrial districts, and though by-laws came into operation to restrict this, the regulations were, as we have seen, far less drastic than modern practice demands, only prescribing curtilages too small for gardens, and in many cases still accepting houses built back to back, a system which could only be of economic value with dwellings of two or three rooms, and which has been condemned, not only in the case of separate houses, but also in that of tenement blocks on account of the impossibility of securing a thorough current of air. Even now such tenement blocks are being constructed in Continental towns with separate flats on each front, so that they are in effect back to back.

The type of dwelling now established as best from the point of view of health is open on as many sides as possible, and while cottages may be grouped for economic or æsthetic reasons provided there is plenty of air space around each group, those planned as detached or semi-detached always show a slight superiority in the increased freedom as regards aspect and aeration.

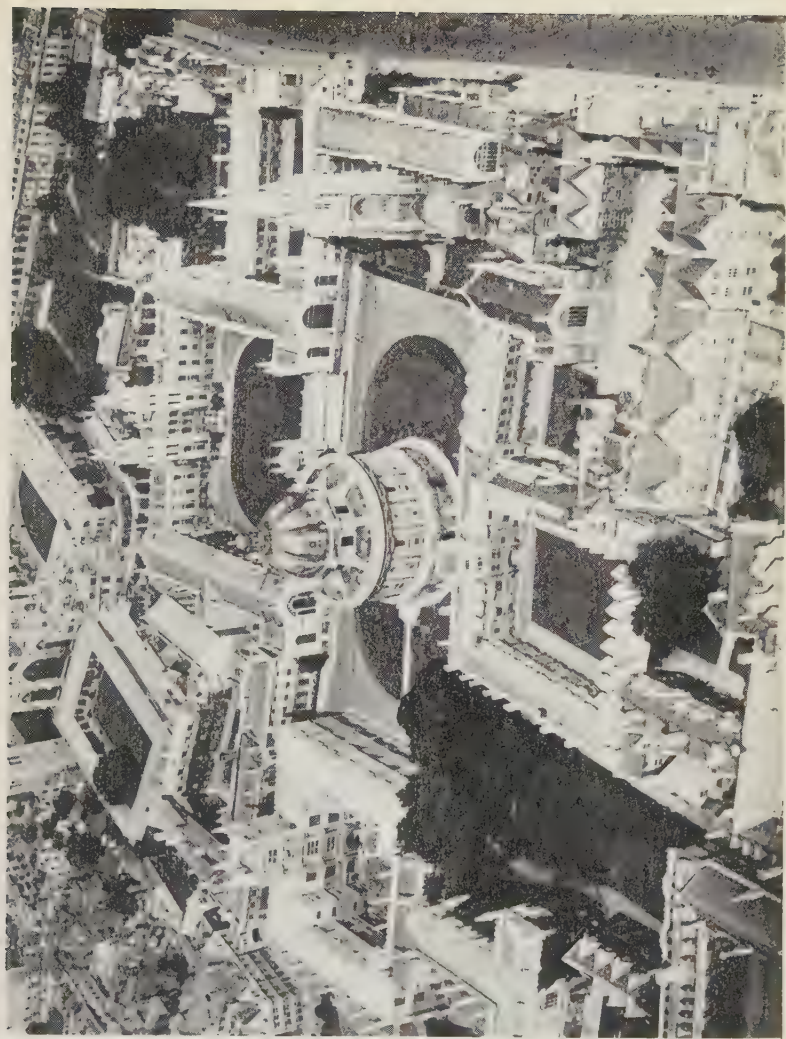
CHAPTER XV

Education and Recreation

FROM the town planning point of view, education and recreation may well be grouped together, and there is a sound basis for such a grouping, as recreation undoubtedly educates and education is, or ought to be, recreative. Separate classifications of the two are possible, if difficult, but for our purpose they may be dealt with together, since we have little connection with book learning, which is the popular concept of education as a distinct operation, but a great deal to do with those other aspects that concern themselves with open air pursuits and merge indistinguishably into what are recognised as recreative ones.

It has long been accepted by educationalists that the latter are of primary importance in the education of the young, and various steps have been taken in the interests of physical and mental development to change the type of school building so as to make provision for working as much as possible in the open air, and the school surroundings in order to facilitate practical operations, such as gardening and constructive work, as a part at least of the programme. The experiment has even been made of taking the children *en masse* into the country during the school hours, a plan economically practicable, because they can travel in an opposite direction to that of the daily influx of workers into the town.

Whether this be generally possible or not, the typical



47. Oxford. Buildings dominating the Plan and their Relationship well studied



48. Cambridge Colleges

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town school, with a playground so limited that it must needs be but an asphalte yard, is so far from the recognised ideal as to ensure that only in the most acute emergency will others be erected on this model. With the increasing provision of open spaces it is probable that future schools will be located adjoining these, so that there will be scope for games and the study of nature, without involving journeys for these pursuits. As it is recognised that no extensive housing schemes can be laid down without ample provision for open air recreation, it will become a matter of course that the provision for schools will be considered in relation to these, and that the structural characteristics of what are misnamed our "public schools" will be aimed at in the design of schools for all classes. This will not be so costly as might be imagined, for the playing fields can serve different sections of the community at different times, the infants mainly before 2 p.m., the scholars between that hour and 5, and the adults from 5 p.m. till dark.

The type and amount of the accommodation which is being established as the standard in newly developed districts will gradually influence the general attitude towards the older schools where there is a pronounced shortage of open space, and in course of time the defects of these will be felt intolerable, and there will be a stronger demand than there is at present that advantage should be taken of all clearances of insanitary property for the purpose of providing open spaces. The principle is recognised in the legal provision for reduced compensation where this course is adopted, and though this has often the effect of visiting on the children the

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sins of the fathers, we know that there is a sanction for this form of vicarious retribution, without even the proviso that it is to take effect for the good of the greater number.

Having laid down the axiom that school buildings should be in proximity to open spaces, though these latter, if economy demands it, need not be exclusively allotted to the school, we can now pass on to the consideration of the parks and recreation grounds themselves.

The formal park of the eighteenth century, and the "landscape" one of the nineteenth, are of far less value from the educationalists' standpoint than the types of open space most in demand at the present time, and though the former has a value in definitely enhancing the unity between city design and natural features, we cannot afford to give it the dominant position it once held. The social reformer asks for two things, the nature reserve, where townsfolk can appreciate those aspects of life which would otherwise be beyond the range of their observation, and the recreation ground, varying in type according to local demand, but laid out to afford the maximum accommodation for the physical activities which counteract the defects due to their absence in most of the occupations of the dwellers in a town.

It is incumbent on all towns of any size to keep a look out for positions reasonably accessible which offer advantages in situation or character, and to secure them when opportunity offers. Very often these are areas of the least value for economic purposes, irregular in formation, bluffs or escarpments, the valleys of small

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streams, dingles or cloughs, just the kind of places that, if encroached on by building operations, destroy most effectually, for very small profits, the amenity of the locality in which they occur. They possess, as a rule, not only the attractions of varied landscape effects, but also a wider range of fauna and flora than more uniform tracts, an important advantage from the point of view of their educational value. We must not, however, look at them solely with the eye of the naturalist. Education is not alone the acquisition of knowledge, it covers the expansion of the faculty of appreciating the drama, so to speak, of both nature and art, and thus it is of importance that any feature of outstanding effect on its surroundings, be this hill or valley, should be preserved from obliteration by the encroachment of undistinguished buildings.

Turning to the provision for recreation in the form of playing fields, the selection would usually be of level ground, suited to those games which give the maximum activity in relation to the area employed. The national games of football and cricket must, of course, be provided for, while tennis gives more intensive use in proportion to the ground occupied. Bowling greens are not extravagant of space, and gymnastic exercises take comparatively little. A running track can easily be arranged, but it is only with exceptionally favourable conditions in the matter of open land that public golf links can be included, though this game has the advantage that it is independent of a level site. Of course there are many examples of parks where a part is available for games, and the remainder, suitably laid out, provides walks and pleasancess, and doubtless this division is a

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sound course where circumstances have dictated it, but such parks would not replace the quieter reserves the naturalist will ask for. In addition, where part of an area required for games is irregular in its outline and levels, it might be profitably laid out as an open air concert hall or theatre.

Besides the larger grounds for organised games, small playgrounds among the groups of houses must be provided for young children, so that they can have the benefit of free exercise in the open air conveniently near their homes. These playgrounds will only demand a relatively small proportion of the total area required for playing fields, and at the same time the cost will be trifling, since they can be calculated as part of the allowance for garden ground in a housing scheme.

The proportionate allocations for these open spaces will be considered in the chapter on Parks, and we can therefore pass on to a type of activity which, while ostensibly concerned with the lighter forms of recreation, sometimes embodies educational features in addition, namely, the temporary exhibitions and their adjuncts. These, no doubt originating in the old fairs which combined business with entertainment, have acquired a changed complexion, owing first to the establishment of pleasure gardens such as Cremorne and Vauxhall, and later on to the inauguration of the large international exhibitions in various European capitals and the more important cities of the United States. While the more serious features of these have gained an increasing popularity, the peripatetic entertainments appertaining to the fair have expanded their plant and have continued their peregrinations among the minor



49. South Kensington. Showing Axial Planning, but Failure in regard to Vistas



50. Water Effect. The Exhibition at San Francisco, 1915

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towns. These have not sufficed for the more populous centres, where "joy cities," offering the same class of entertainment on a larger scale, have been established.

In the United States the "joy city" is a permanent feature as a distinct establishment, but in Europe it is more usually joined to an organisation which either temporarily or year by year purports to have a serious aim, thus more nearly typifying the mediæval fair, which gathered people from far and wide for the purposes of commerce and hirings, and where the amusements were at first merely incidental in character. St. Bartholomew's, Barnet, and other Fairs, afforded picturesque incidents and a good deal of rough and tumble amusement to those frequenting them, the prototypes of the present-day votaries of the "joy city," while those having a taste for rather more sedate enjoyments brought into popularity the gardens of Vauxhall, Cremorne, and their successors.

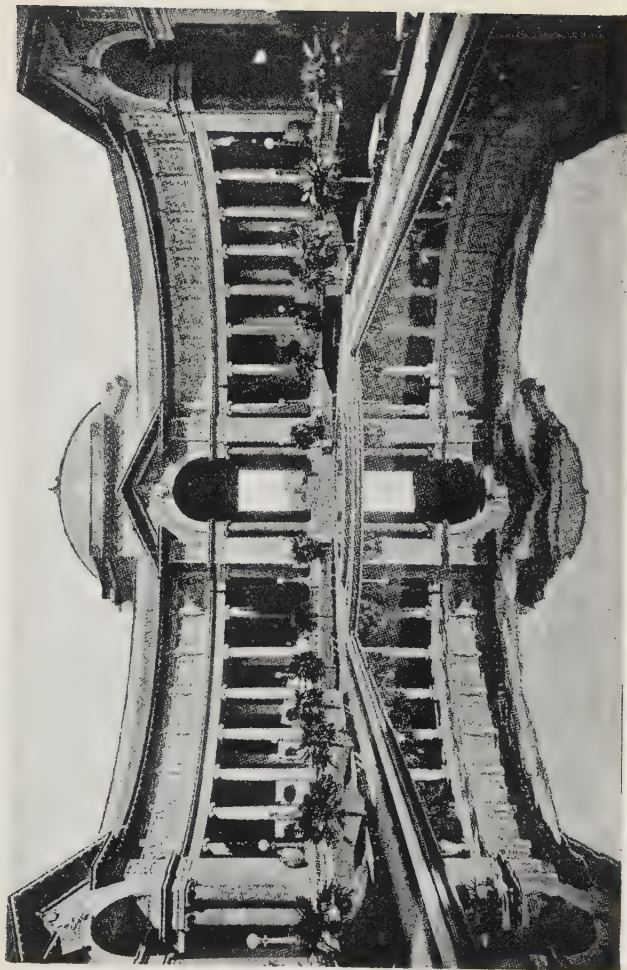
In more recent times the combination of these various ideals has brought into vogue the exhibition as a place of interest and amusement, and the emulation of the nations in displaying their resources by this means has been responsible for a vast amount of grandiose planning and the display of effects more easily secured by means of temporary structures than would be possible with more costly permanent buildings. Despite much that may be open to criticism from the point of view of design, it can be affirmed that the impression given by many of these undertakings has been definitely beneficial, as they embody more dignified and spacious planning than is to be found generally. Of course the lay-out and massing of buildings on

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a site selected for the purpose, and free from the restrictions met with under ordinary conditions, together with the fact that the structures themselves are less dominated by economic and practical requirements, offers more opportunity for untrammelled imaginings, and therefore the more successful efforts have exercised a definite influence on the appreciation of comprehensive design.

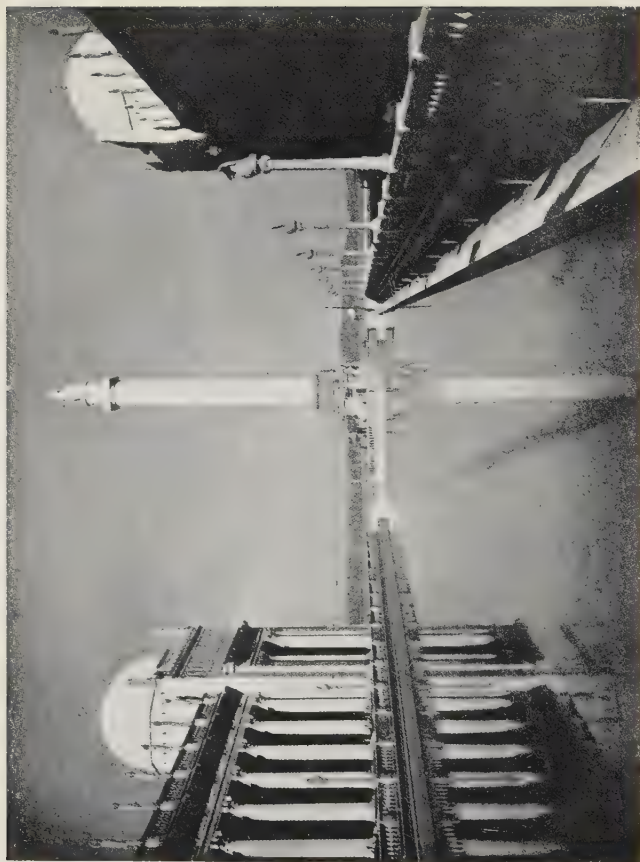
Paris, already in the forefront in this respect, may have had little to learn, but there can be no doubt that the popular standards of Chicago and San Francisco have been materially raised by the very effective planning of their exhibitions. Yet nowhere has the full advantage been taken of the opportunities these undertakings have afforded for experiments in the subsidiary aspects of design, such as gardening, water and illumination. In spite of the fact that from time to time quite exceptionally good effects have been contrived, these have not been regarded as setting a standard for the decoration of our cities, which still sadly lack the vivacity obtainable by a few of the expedients that have been freely employed to gain popularity for exhibitions and their adjuncts.

After these excursions into specialised activities we thus come back in the end to the city itself, which is, in its functions and organisation, the main factor in the education of the townspeople. It is for this reason that the movement for better and more logical design in the development of our large towns is of such paramount importance. Confused and sordid surroundings can only result in a correspondingly sordid outlook on life, while the noble city cannot fail to evoke a broad-



51. A Hemicycle. The Exhibition at San Francisco, 1915

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52. Water Effect. The Exhibition at San Francisco, 1915

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minded nobility in its citizens. Education is only to a minor extent a matter of books and class-rooms ; what makes or mars a people is mainly the type of environment, no less from the point of view of the social standards themselves than from that of their expression in material form.

CHAPTER XVI

Civic and Social Centres

WE must once more turn to Rome for the idea of both the civic and the social centre, though in neither case do we now demand the exact equivalent of what was then provided. In the first case it was the custom of the Romans to group round the Forum the buildings connected with civil administration, and in the second the magnificent Thermæ provided for the various forms of communal social activity, including, as they did, not only the baths, but provision for various athletic exercises, and also for social meetings, discourses and recitations. These, as we have seen, it was the recognised duty of the authorities to establish and maintain, though they were often aided in this by private munificence.

Only quite recently has a similar attitude towards these centres become at all general. It is true that during the Middle Ages the combination of religious and municipal functions with social activities tended towards the concentration of all these in a definite centre, but when these interests separated themselves, this tendency lapsed and no effort was made to provide on similar lines for the less unified activities of the modern city. Official buildings were left to find a place when and where they could ; churches and chapels, as might be expected, distributed themselves in various quarters, while the other communal provisions were forgotten altogether, and were only re-established piecemeal on an opportunist basis, just how and where it

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seemed possible, with no idea of a co-ordinated group. Schools claimed attention first ; then " baths and wash-houses " secured popular support ; games found a footing in odd corners of the parks, and the free libraries began to be accepted as a public need. Art galleries and museums were for long regarded as appropriate only to cities of metropolitan importance, but we now find that most places of any size are endeavouring to include them in their municipal programme.

While there is no occasion to be pedantic on the question of grouping all these together, it being obvious that there is no real necessity for this, and often very definite difficulties in so doing, it is clear that a much more emphatic expression of civic dignity will be achieved by a studied placing of public buildings in relationship to each other.

Taking the administrative centre first, we shall find here and there that such a group has either formed itself or has been found practicable without too great an effort. Birmingham's chief public buildings are massed together, though not with any very striking effect as regards their architectural position. Cardiff has been more fortunate in that a large park, reserved by the Marquis of Bute till long after the town had extended beyond it, was transferred to the corporation and laid out in sites for the city hall, law courts, museum, university, and several other public buildings. The arrangement of these has not been all that could be desired, but the spaciousness of the site, and the inclusion of trees and gardens, place it far ahead of anything else of the kind in this country. It is to the U.S.A. that we must go to see the civic centre established as an essential in

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the design of an important town. In many towns there such a grouping has either been secured or is in contemplation. That of Cleveland was one of the earliest to take shape, but Pittsburg, St. Louis, Chicago, and a number of other cities have schemes laid down for this purpose.

From the civic standpoint it is a great drawback that in England we have such a large number of administrative bodies functioning quite independently of each other. Post and telegraph offices are a Government affair : the county may have its offices in one place and the town council in another : the town hall may, or may not, be in conjunction with the latter, the courts perhaps in a district quite remote : and the list could be extended almost indefinitely. Apart from the obvious inconveniences of such a distribution, it militates seriously against the effect of dignity that would be gained by the co-ordinated grouping of all these buildings in a well chosen position, and though we know that this is not always practicable in an old established centre, much more could have been done in this direction if the ideal had been kept in mind and a scheme forecasted with the aim of its gradual realisation.

The same principle applies no less imperatively to the educational group. The university, with its allied institutes and schools, now a recognised feature of all important centres, has a definite claim to consideration as a whole, and though the character may vary according to local occupations and conditions, it will be the exception rather than the rule if these suggest that educational activities should be distributed between various localities in preference to being grouped in a suitable site not



53. Westminster. An Old Centre largely Remodelled



54. Cardiff Civic Centre, with City Hall, Law Courts, Museum, University, and other Public Buildings

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too remote from the focal centre of the city. It must be outside the commercial area or it will be impossible to provide space for the inevitable extensions, and as university activities are rapidly, and fortunately, ceasing to be the concern of the adolescent only, the educational group should be easily accessible, both from all parts of the city itself and from the outside region of which the city is the focus.

Passing on to the social centre, as the group of buildings having recreation as their main objective is usually entitled, a much more varied type of demand presents itself. Social life takes many different complexions, ranging from that to be found in the clubs of the great capitals to the simple intercourse of the village hall. Nor is it solely a matter of wealth and culture; there are even in a single nation wide variations in the attitude towards social relationships, and any organisation providing for them must base itself on the local traditions. It is out of the question to discuss these at length, and the only course is to admit that, while defining in general terms the features to be included in such a centre, this is subject to reservations in regard to national or local customs and ideals.

Then, again, there must be main and subsidiary centres in our large towns since they have outgrown any possible civic unity in this respect, and it would be as futile as it would be unreasonable to try and cultivate social relations on a mass basis. This is easiest in the village, less easy in a city suburb, and almost impossible in many of the overcrowded districts which are our heritage from the "industrial" age, but these centres are wanted if people are to have a chance of lifting themselves

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out of the depression in which it has deposited them. The beginnings are already with us, and that they will eventually take their place in the civic organism cannot be doubted. We have picture galleries, museums, libraries, public baths, and recreation grounds as separate institutions, having their specific values, but they would exercise a much stronger influence if they were grouped and supplemented by other desirable provisions, so as to give the idea of a gathering point for all local activities, on the lines of the club group at Port Sunlight.

The art gallery, museum and library, with their intimate inter-relations, should obviously be combined, together with studios for art work and for the preparation of scenic effects to be employed in the adjacent theatre, which would also link up with facilities for cultivating music and the dance. Then the baths and gymnasium seem naturally to demand a place in the group, with such supplementary adjuncts as a small running track, a skittle alley, and the like. Of course there must be the usual club rooms for meetings, lectures, games, social intercourse and refreshments, with separate provision as far as necessary for men, women and children. This is more or less what the group would offer where nothing beyond a good building site is available, but where this can be secured in juxtaposition to a recreation ground, we can add playing fields for adults and children, tennis courts, bowling greens, lawns for dancing, and possibly such additions as a swimming pond, an open air theatre, and even a golf course. Birmingham is developing a recreation centre on these lines at the Lickey Hills.



55. Vienna. Before the Removal of the Fortifications



56. Vienna. The Ringstrasse laid out on the Site of the Inner Fortifications
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Naturally the programme must be proportioned to local resources and demands, but it should cover as broad a range of activity as possible, and even the village hall may find space for a small library and local museum. The main value in the system of grouping is the facility it offers for widening the interests of those frequenting one or more of the sections. Some who regularly visit the library have no idea of taking part in music or the drama, while others, enthusiastic over athletics, ignore the existence of books or pictures. Of course it would be absurd to demand that every one should be modelled on the same pattern, but one of the chief obstacles to social intercourse in all classes is the existence of numerous blanks in experience and knowledge due to too limited an outlook.

Again, if each district has its own centre, we shall get the incentive of emulation, and with the huge agglomerations of dwellings having but little interest or distinction that now characterise our great cities, it should not be forgotten that the appearance alone of a group of buildings on a scale allowing for dignity in their conception will give focal points that are sadly needed to break the monotony of these far-stretched suburbs.

The city can only have one municipal group, but the social centres will take their place in the encircling districts, adapting themselves to the needs of each, and counteracting the tendency of the overgrown town to swamp the social contacts of its denizens.

CHAPTER XVII

Parks and Open Spaces

THOUGH it has not been possible to escape a few references to parks and open spaces, the importance of these in town development demands that they shall come under review more specifically, a number of considerations being involved in the study of the whys and wherefores of park site selection and lay-out.

To begin with the selection, this may be in response to what might be termed a "positive" demand, such as the "natural beauty or historic interest" of the area, to quote from the title of the National Trust. Then places with an interesting flora or fauna have a claim, and, as well as these, we need good level sites in convenient situations for the playing fields and smaller playgrounds for children to which we have previously referred, and suitable allocations for allotments. In providing for the living we must not forget the dead and the need for cemeteries, placed neither too far for convenient access nor in places which could otherwise be more profitably employed.

We must add to this list areas to be reserved as open spaces for negative reasons, such as sites which are steep and irregular by nature or by the operations of man, and which cannot be economically developed, brooks to be kept pure and bright, low lying ground on which it would be unhealthy to build, zones to protect residential districts from proximity to undesirable industrial operations, and other reservations of this

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type. It will be well, however, before going into further detail, to take a brief retrospective view of the types of park we have inherited from the past, and the extent to which these have been adapted to meet changing ideals.

The royal hunting parks have mostly come into the hands of the people, and on the Continent, these were usually laid out as described in the chapter on the Renaissance, with geometric triangulations having circular clearings at the principal intersections. Those in England had rather less of artifice and more of nature, but the formal treatment was accepted for the smaller parks, such as Greenwich, Hampton Court, and Kensington Gardens. Later on these regular designs were abandoned in favour of a studied "naturalism," and in some cases were even swept away under the same influence, a course adopted at the Bois de Boulogne and in our own St. James's Park. Throughout the nineteenth century the "Landscape School" was paramount, a school which, while it abandoned formality, still retained the sophisticated neatness and definition of grass, gravel and shrubbery belonging to the traditions of the formalist.

The parks of the continental cities mainly belong to these two categories and are, in general, welded into the city pattern by the customary tree-planted avenues and boulevards. In this country we have a curiously mixed heritage of parks planned, private parks acquired, and woodlands, heaths, and commons left in their natural state. In almost all cases the park is regarded as an entity in itself, and, with perhaps one or two exceptions like Regent's Park, no attempt has been

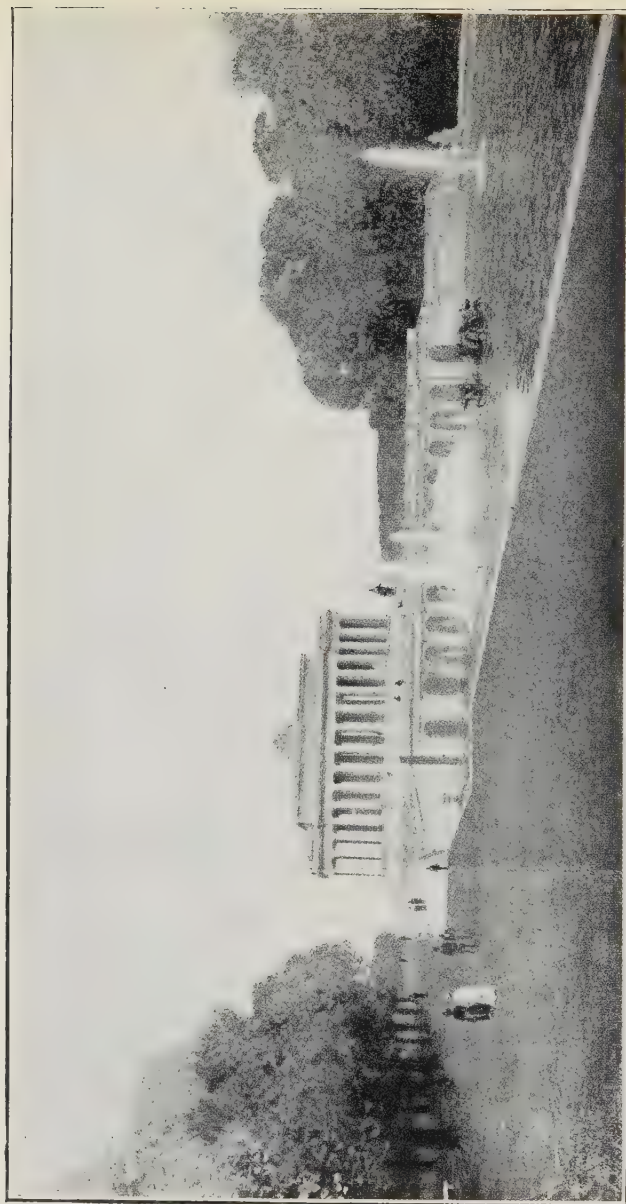
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made to combine the park and its surroundings in a comprehensive design. Such instinct as we have for reinforcing groups of buildings by formal lay-out, seems to expend itself in private gardens, and but few efforts on these lines are to be found at the present time in our public places, though there are hints of a movement from which we may expect something in the future.

Whatever may be done in this direction, it is unlikely that we shall carry out the idea of unity of park and town to the extent customary on the Continent, and we shall assuredly retain our preference for the park as a relief and respite from the life of the city rather than as an enhancement of it, as is the accepted view abroad. For this reason the more recent municipal acquisitions of rural areas are not elaborately laid out, except in so far as it is necessary for games or to complete a scheme incidental to a mansion or an existing plan, and this is right, because, given equally easy access, the "nature reserve" will be far more popular than the landscape gardener's park. Apart from the playing fields, distinct in their purpose, the only strong competitor is the well-furnished flower garden, not just the few circles and crescents, carpet bedded, that every self-respecting park includes, but such as may be found with the old houses which have sometimes come into the possession of the public. Real flower gardens with herbaceous borders, beds gay with well-chosen colours, water and water plants, flowering shrubs and trees, where the changes from season to season ensure a sustained interest—these, and the woodlands with streamlets and viewpoints, are the pleasure grounds that most



57. Leamington, with its River Parkway



58, The Lincoln Memorial, Washington

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delight our townsfolk, and though there is no need to disparage other types, it may be borne in mind that hilltops, woods, and flowers are sure in their appeal.

The Enclosure Acts, framed with the intention of providing an increased agricultural output to meet the needs of a growing population, deprived us of large areas of common land which in many instances would have been most valuable as playgrounds for our great towns : in other cases the greed for land has resulted in the filching of large slices of public property, and this more especially where proximity to the town increased the temptation. Only towards the middle of the nineteenth century did we begin to wake up to the danger and set to work to secure what remained of the common lands. Some were then recovered, some bought back, but even later than this there were losses from encroachment. Only in a few cases have these acquisitions been transformed into the accepted type of park, the more usual operations having fortunately been limited to the making up of a few of the principal roads and paths, and provision for games where this was demanded.

We may look forward to an increasing desire for public open spaces, and to a more intimate study of the means by which these can be made easily accessible from the populous districts. Some of our great towns own widespread parklands, Leeds, for example, where there is an acre to every 240 inhabitants, and Bradford, where this ratio is more than doubled, in each case with new roads and tramway routes making these parks their objective, and yet in them as elsewhere there are still densely-built-up areas from which it is by no means easy to reach playgrounds of even moderate size.

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In many towns the bulk of the land on the fringe of the built-up area ought by rights to be reserved as open spaces, but as this will in most cases be economically impracticable, an alternative is the retention of strips or belts of ground which will appropriately link up the built-up areas with the larger parks or reserves that have been secured further afield. Boston, U.S.A., offers a good example of how this ought to be done, and many other American cities are following on the same lines. The valleys of small rivers or brooks are suitable for reservation as parkways of this type, and in Surrey an effort is being made to secure the course of the Wandle from Carshalton to Merton against undesirable developments that would destroy its beauty. There are numberless streams of this type around London and our other large cities where similar action is urgently needed.

Then there are other sites, mentioned as of low value for practical purposes, that may be of great assistance in the provision of a comprehensive park system. Apart from the classic example of the Buttes Chaumont in Paris, made out of the former refuse tip of the city, we may cite Leeds as having acquired an old quarry area of 53 acres which will, at comparatively small cost, form a most interesting park. Then we have in some districts extensive mounds left by disused coal pits, which, unpromising though they appear, are yet capable of being planted and ultimately organised as attractive open spaces. A good deal of work in this direction has been carried out in South Staffordshire under the auspices of the Midland Re-forestation Association, which has, during the last twenty-two years,

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dealt with some 14,000 acres, and has found that on this seemingly unpromising ground it is practicable to grow alder, wych-elm, birch, robinia, ash, sycamore, and other British trees, together with shrubs such as elder, gorse and broom, while in the course of a few years the bare surfaces cover themselves with wild flowers and grasses. Nature itself gradually provides a superficial soil, and in the end the disorganised irregularity of these neglected mounds becomes a source of beauty. There are still large areas awaiting these ameliorative operations, and it may even be hoped that, when the worser influences of fumes and smoke have given way to improved methods in the consumption and utilisation of fuel, such operations may follow on the heels of the industries concerned, so that no long period may elapse during which the country suffers from the disfigurements now regarded as inevitable. Given the desire for this, it would not be difficult to deposit such accumulations as cannot be avoided, so that there should be a rotation over a series of areas by means of which reorganisation may be provided for in conjunction with the operations responsible for the injuries.

These incidental opportunities, though it is important that they should not be neglected by reason of their influence on the standards of living among those who are otherwise subjected to the depressing effects of untidy and sordid surroundings, must not be permitted to obscure the necessity for a careful investigation of communal requirements in the way of parks and recreation grounds. The most definite of these is that of playing fields, for which there is an increasing

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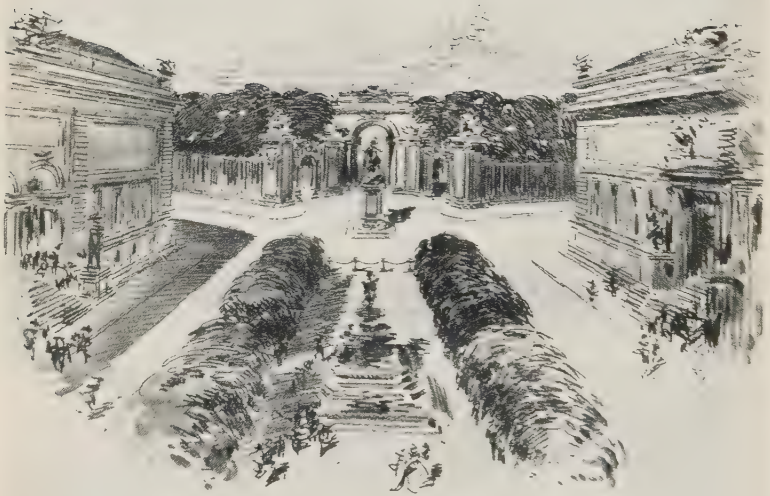
demand that will not, under average conditions, be met by the provision of less than about two acres for every 1,000 townspeople; a further quarter acre per 1,000 will, if the sites are properly selected, provide for the needs of young children, while the amount allocated to allotments will vary considerably, according to the occupations and traditions of the workers. It has been found, however, that where ground has been well chosen and is easily accessible, the demand for these tends to increase, and cultivation as a profitable recreation becomes more general. It has been pointed out that the too frequent untidiness and casual construction of allotment buildings detracts very seriously from the appearance of this feature in our suburbs, but this aspect is now claiming attention, and an improved standard is likely to secure popular support in the future, though, of course, it will take time to arrive at a very general appreciation of the merits of orderly planning and design as applied to these garden plots.

There is less definite guidance as to the area for ornamental parks and gardens, and for reserves of a more rural character. Hygiene and amenity suggest that these cannot be too extensive, subject to the limitation that they do not interfere with the convenient and economic organisation of the occupied districts. This will rarely be the case, as we can see when we bear in mind the speed and cheapness of modern modes of transit. Relatively to their recreative value "nature reserves" are much more economical in upkeep than carefully maintained parks, though these latter have their appropriate place as part of the decorative



59. Parks and Parkway System, Boston, U.S.A.

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60. Formal Entrance to a Park

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scheme of a town area. The municipal budget will, however, impose a limit on the areas kept up in this form, while the expenditure on the natural reservations may be kept very low when resources are limited, more especially where the citizens have acquired the sense of civic responsibility that eliminates the risk of wilful damage.

Thus we may picture the city as a whole, with playing fields and playgrounds distributed according to the needs of the population, these being provided with marginal walks and trees to give form and definition to their lay-out, with a limited allowance of decorative parks, gardens and avenues, and with an extensively ramified network of parkways and reservations, secured as opportunity offers, and linking the urban area with the surrounding countryside.

In this connection it is apposite to include the following extracts from notes on "Town Trees and their Characteristics" collated by Robert H. Mattocks:—

"The Robinia or False Acacia is perhaps the best tree for standing prolonged heat and drought and for withstanding the effects of impure atmosphere. It grows freely in almost any soil, and retains its leaves until the first sharp frost, which takes them all off.

"The *Ailanthus glandulosa* has rich green spreading foliage, which is coarse in texture and tropical in effect, but green until late in the year. It will thrive under most adverse conditions, including barren soil, dust-laden and smoke-filled atmosphere and paved surroundings. Where it would be impossible to have a good street tree the ailanthus may be planted, and with a little care in training, a fair shade tree may be

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secured. When other trees will grow well the ailanthus should not be considered.

“The Ash has been little used for street planting, but possesses some points that recommend it as a shade tree. It is a rapid grower, hardy, a good smoke-resister, and has no serious insect pests. It will succeed in almost any soil and will stand sea air. Its leaves are about the last to come out ; as a compensation, they are shed late.

“The Birch. Both the common and silver varieties make beautiful trees for suburban roads, having a light, graceful appearance ; but they should not be used in very smoky districts. This tree is short-lived, quick-growing, will succeed in very exposed situations, and may be planted in almost any soil, though preferring a light loam.

“The Catalpa is a quick growing, ornamental tree of moderate size, with flowers resembling those of the horse chestnut. It is a splendid smoke resister, and retains its leaves until late in the season, but it should only be planted to give variety in the areas most injurious to plant life. The best variety is *Catalpa speciosa*.

“The Elm. Elms are not good smoke resisters, but will grow well in the more open districts. Although almost ideal in shape, branching and general beauty of form, the elm is subject to attacks from a great variety of insects, which make it a costly tree to look after, and render the limbs of the larger specimens liable to fall off without warning.

“The Hackberry is a medium-sized tree, in foliage and general appearance resembling the elm, for which

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in America it is often substituted. Its straight trunk divides high above the ground, it gives good shade, and is free from serious disease and insect pests. It is slow growing, but vigorous and long-lived, and tolerant of many conditions of soil and climate, but is not a good tree for the most severe street conditions.

“The Horse Chestnut is best in open situations, as it is not a good smoke resister, and in confined spaces soon shows signs of distress and becomes a danger.

“The Laburnum succeeds well either inland or near the sea, even when subjected to a large amount of smoke, but it casts its leaves early. The seeds are poisonous, and the tree should only be planted where these cannot be eaten by children.

“The Lime grows to a medium-sized, shapely tree, with a straight trunk and numerous twigs which improve the winter appearance and render it a favourite tree for pleaching. It is a splendid avenue tree, but most varieties do not succeed in the worst parts of a large town, with the exception of the Crimean linden, which has a more leathery leaf and will stand much more severe conditions in this respect.

“The Maidenhair Tree is superior to most in withstanding smoke and fumes, and it is entirely free from insect enemies or disease. Even when the foliage is ready to fall it betrays little effect from the atmosphere. It will grow in any soil, whether rich or poor, but its growth is slow.

“The Norway Maple withstands city conditions well ; it has splendid resistance to insect attacks, and is easily transplanted. It puts forth its leaves earlier and retains them later than many other maples, and is

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adapted to a great variety of soils and situations. The Red Maple is a quicker-growing variety, hardy, and thrives well in rich and rather moist soils. The Sycamore seems to withstand chemical fumes well. The variegated variety is preferable for smoke resistance. It will grow in any soil, but prefers one that is rather moist.

“ The Oaks have not been used much in this country. This may be due to the ordinary English variety branching low and throwing branches out horizontally, but, more probably, to the lack of properly prepared saplings, as without careful preparation it is difficult to transplant. Oaks have, however, much to recommend them. The Red Oak and Scarlet Oak will stand severe street conditions.

“ The London Plane stands first in the list of town trees. It is adapted to a wide range of soils, and is one of the few trees which succeed when planted in a hole made in the side-walk. It grows a good clean stem, reaching a considerable height before lateral branches are thrown out. The foliage is not too dense, and the annual shedding of the bark keeps the breathing pores open. The trees are easily transplanted, and are unusual in that they combine rapid growth with long life. Planes are specially suited for planting on wide avenues and boulevards, but, in spite of their large size when grown naturally, they can be planted, when specially desired, on narrower streets, as they withstand pruning well and can be trimmed at any time with any degree of severity.

“ Poplars are splendid smoke resisters, being grown successfully under the worst conditions, but they are

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quick growing and soon find the slightest flaw in any drain near which they may be planted, quickly filling it with a ball of fibre. They should be reserved, as far as possible, for places where other trees will not thrive. Most varieties throw out heavy lateral branches which, if not annually hand-pruned during the earlier period of growth, break off close to the trunk in high winds when the tree has attained full size. This annual pruning is expensive. In some American towns the planting of poplars is forbidden.

“Of the varieties of pyrus the Mountain Ash is a valuable small tree for town planting. It withstands smoke and fumes well, and is a tree of great beauty, capable of growing almost anywhere with a minimum of attention. The White Beam is another valuable small-growing variety which will grow luxuriantly in confined places and even in poor soil. The tree grows fairly rapidly until its tenth year, when it gradually slows down. The Service Tree is a rather larger type of pyrus with silvery leaves. It is also a slow grower, but does well in the cleaner parts of towns and at the seaside.”

This brief summary must suffice here. Those whose interests stimulate them to further studies in this subject will find it dealt with in the works specifically devoted to trees for town planting.

CHAPTER XVIII

The Furnishing of the City

IT has been generally recognised that, even after the main lines of the plan and the proportions of the buildings have been considered and appraised, there yet remains a great deal that can enhance, or injure, the effect of the street pictures in our towns. The memorials and monuments, the lighting arrangements, the kiosks and other structures such as waiting shelters, etc., which are provided for the public, all claim to be studied in regard to site, character and suitability to environment. More particularly do pleasure resorts and watering places require ample provision of this kind, and also special features for open-air entertainments, usually, but not necessarily, limited in other towns to the bandstand in the park. Incidentally may we not suggest that these activities are considered to be too exclusively the prerogative of the holiday resort, which employs them competitively to attract patrons. Could not the busy commercial centre well afford to provide more in this direction and offer these forms of recreation as a part of the daily life of the citizen rather than as only to be enjoyed during a brief annual holiday? This is the general practice on the Continent, and it must be admitted that our own towns suffer by comparison in this respect.

To return to our "furnishing." In former times the city relied to a much greater extent on this than we do nowadays. In the Middle Ages the religious ceremonies and civic customs gave us the market crosses, shrines,

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well heads and other features, all handled with decorative intent, and the void left by the cessation of these demands was filled in later days by a return to classic motifs for the decoration of the salient positions in the Renaissance plans. The old entry through a gate in the town wall, often elaborately decorated, suggested to the designers of this period the revival of the triumphal arch of the Romans, one of the principal features of classic times, when the cities were embellished by numerous altars, monuments, colonnades, and the like.

Reminders of our professed faith would in this era often be inconvenient intrusions into every-day life. Our spiritual supplies being delivered to us by means of the printed page and ethereal vibrations, and our material ones by vehicles, pipes and wires, these no longer offer an excuse for communal activities, and traditional features of long standing in the civic organisation disappear. Statues of eminent citizens, whose careers thus advertised might presumably excite emulation among their successors, rarely seem to succeed in their appeal, and the pillar box, though not to the seeing eye without its element of romance, seems to fail as a social substitute for the well head or even the parish pump. Thus the furniture of our streets becomes less of an essential feature and merely incidental, and our attitude towards it has accentuated this diminution of values. Civic buildings seldom seem to achieve a more monumental character than the ambitious efforts of commerce, and, as for our monuments themselves, a dreary formalism or else an absent-mindedness as regards their purport seems to neutralise

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their influence in conveying any meaning to the observers.

The plethora of statues and monuments that are dumped haphazard about our streets and squares do nothing towards enhancing the beauty and interest of the city. If they are observed at all they cannot be properly seen amid a crowd of vehicles and with no adequate background, but more often they escape notice altogether. In some countries where this matter is better understood, the symbolic aspect which in London has been remembered only in the placing of a few politicians in Parliament Square, dictates the form and position to the maximum degree possible. The naturalist meditates in a grove, the philosopher sits sedately within the cloister of the university, and the demagogue gesticulates in the public square. It is true that our Duke of Cambridge rides past the front of the War Office, which, by the way, was barely completed in his time, but his memorial makes little more impression than would an omnibus held up by the traffic.

When a public building is designed provision could so easily be made for its façade and surroundings to provide appropriate settings for statues and monuments, commemorating individuals or events connected with its purpose, be this administrative, artistic or scientific, and this course would serve the double purpose of enhancing the effect of the building itself and of ensuring that the memorials could be properly seen and appreciated. In contrast with the firm lines and sedate masses of a well-designed structure, it is fitting to employ the more vivacious ones that sculpture offers, and the inevitable horizontality of all buildings devised



61. From the Exhibition at San Francisco, 1915

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62. Amiens. Transition from the Medieval to the Renaissance

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for the purposes in general demand will both gain from and give emphasis to such added decorative features as masts or obelisks seen in conjunction with them.

Egyptian architecture, so rigorously horizontal, demanded the strongly expressed vertical of the obelisk. The Roman qualified both the horizontal element in buildings and the verticality of the obelisk, substituting for the latter the monumental column, but the intention of contrast between these remained and was continued when the dome was accompanied by the minaret, when Wren designed the steeple of St. Martin's, Ludgate Hill, to emphasise the mass of St. Paul's dome, and Fischer von Erlach placed copies of Trajan's column on either side of his dome to the Karlskirche.

Contrasts of this kind are still within the gamut of civic design; the beautification of the city demands their employment, and if used with judgment and imagination they will do much to enhance and enliven the rigid solidity of the masses of building, a function they share with the suitable placing of groups of trees. This does not, however, bring us to the end of the possible embellishments; colonnades, arcades and balustrades are helpful in linking buildings together and in bringing them into harmony with their surroundings.

Then, again, moving water, as a means of enlivening the effects of rigid compositions by the use of fountains and falls, has its recognised charm both in nature and in art. In former times, wherever practicable, runlets of water fed by a river, spring or fountain, were carried through the streets. These simplified cleansing, but being no longer necessary for this purpose, water

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effects are now decorative only, and, while making a less emphatic appeal in our climate than in hot, dry countries, yet claim a place in our schemes. Moreover, the challenge that a waste of water is involved is no longer valid now that it has been found economically practicable to circulate this by means of a pump, except in cases where high jets form part of the design. Fountains are at their best in the sunlight, but also lend themselves to artificial illumination, and it is regrettable that this form of display is not more generally employed in England. Now and again special efforts have been made in this direction, but the experience so gained has not been utilised, as abroad, for the benefit of the general public. Even when we have duly discounted the defects of our climate, there does not seem adequate ground for restricting all gaiety to exhibitions and specially organised fêtes.

Artificial lighting has for over a century taken an important place in town organisation. Before the discovery of gas the cost of maintenance only admitted of the barest minimum lighting for the streets, but with gas a much more liberal provision became possible and the almost simultaneous development of cast iron offered an appropriate material for the lamp standards. While many of these displayed little artistic merit, a large number of designs were produced having a highly decorative quality, and in France especially we see many such standards of suitable and graceful character. In England a few good ones adorn some of the more important positions, while in recent years attention has been paid to lamp design in the United States.

The advent of electric lighting has not entirely dis-

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placed the old type of standard, and the treatment of these, though it has undergone some modification, is still a suitable subject for the skill of the designer, but where high power lights are employed the much greater altitude appropriate involves an entirely different handling of the supports. The more massive type with decorative enrichments has to give place to a more uniform shaft with much less decoration, and that of a lighter character ; so far most of the achievements in this direction have not been strikingly successful, and the combination of lighting and tramway standards has added to the difficulty, but there are possibilities in the arrangements now demanded, and we may expect to see in the near future a marked advance in their æsthetic treatment. For efficient lighting with powerful lamps the centre of the road is a suitable position, but, in the narrower streets, this seriously hampers traffic. The alternative of suspended lamps has been employed, but here again there are disadvantages. Probably the best solution is to be found in standards at the side with reflectors directing the light downwards and across the street.

We have not yet escaped from the tradition of providing only the light necessary for the road and pavement, a heritage from the days when lighting was relatively more costly than it is at present ; consequently, after dark the streets are architecturally null and the buildings indistinguishable.

Increased altitude and readjustments in the distribution of the light would have obviated this failure to make the best of our principal streets, and the advertiser coming along would not have been able to

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flash out his electric signs with the same irritating insistence as now, when he is free to occupy the dark façades that we have left at his disposal. Some of our more important buildings are receiving flood light illumination as the result of private enterprise, and the success of this seems bound to bring about a movement for the general lighting up of the street fronts in business thoroughfares.

Probably in no aspect of civic management may we expect a more rapid advance than in that of street lighting. The range of light effects available, and now being exploited in shops, theatres, and other premises, will establish a standard calculated to make the town dweller intolerant of the measure of light at present accepted as adequate, and as electricity is one of those commodities on which there is a reduction on taking a quantity, it seems safe to prophesy that the demand for light will be a rapidly increasing one. May we not also anticipate that some day or other light will be employed not solely as an illuminant, but also to make its own contribution to beauty in the city. We have already seen something of what can be done in this way in stage effects and in firework displays, and even the electric advertisements make an attempt in this direction. With the support of buildings and foliage, something much more subtle could be devised, and perhaps we may yet see this as a recognised civic undertaking.

There is still another important factor in the furnishing of the city, namely, the provision for, and treatment of, those temporary decorations which accompany the festivities at the reception of honoured guests. These are too often improvised without any regard to appro-

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priate character or imaginative treatment, and merely consist of rows of venetian masts and strings of flags which obscure rather than enhance the expressive quality of the scene. Firstly, the general lines suited to the areas to be dealt with should be decided on for good, and the necessary sockets and other fitments permanently installed so as to simplify the erection and removal of the temporary decorations. This will make easy the erection of masts, pylons, triumphal canopies, and other features more decorative in their effect than that which is secured by filling the air with a haphazard assortment of flags. The triumphal arch was much in vogue some time back and simulated a permanent structure. This was its undoing, as it was bound to look rather stagey and second-rate among the buildings around it. The last thing such decorations should attempt is a semblance of permanence, there being so many interesting effects that can be achieved without this in the way of colour, draping and decorative designs, when these are free from the handicap of having to resist dirt and damp. A well-designed city lends itself to this added ornamentation, but it is always difficult to secure a complete harmony and avoid a tawdry and meretricious appearance when the support from ordered planning and finely grouped buildings is lacking.

CHAPTER XIX

Scale and Proportion

STUDIES in town planning cannot be regarded as complete without the inclusion of some considerations respecting the appearance of buildings in relation to each other, and many problems arise as to maintenance of a general harmony when structures for widely differing purposes come into juxtaposition. Of course zoning would be of material assistance here, but this is still at an early stage, and even were it fully operating a complete solution would not be within its province. There would still remain many points at which differing types of building come in contact with each other, and therefore, as we recognise that these are, or ought to be, of a character suited to their use, it is inevitable that they must then be distinctive ; indeed, there is no reason why they should not, nor will such distinctions be detrimental, provided their designers have a general unity in outlook, and even with some degree of latitude in this there may be quite a consistently good effect, provided one consideration is kept in mind, namely, that of scale.

Broadly speaking, the tendency is that with increased resources scale will increase in proportion. We see this in all branches of activity, in mass production, in mechanical engineering, in ships, and in other commercial activities. No one can have a word to say against it, but we have to realise that, unless we are content to live in a heterogeneous agglomeration of conflicting features, measures must be taken to reconcile the

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different objects that our varied needs bring into demand, and it is, *inter alia*, the function of the town planner to effect this reconciliation.

In times when there was a strong artistic feeling dominating all the activities, this harmony came about automatically, and even now we see a marked variation in the degree of appreciation this aspect meets with in different countries, those following the Latin tradition making a more sustained effort towards consistency in scale. Elsewhere, the great progress that has been made in constructive possibilities seems to have obscured the other points of view, and we find the relationship of structures to a comprehensive harmonic conception practically ignored, while even apart from the driving force of practical and economic factors, there is also in operation a gargantuan cult of bigness for its own sake.

Size in itself is not inherently antagonistic to the preservation of scale. Mediæval churches generally tower above their surroundings and yet contrive to remain in precise scale with them ; St. Paul's Cathedral continues this tradition, in so far as that it combines breadth of treatment with components of the smallest dimensions compatible with such a design.

Bridges are a crucial test, and even when these were customarily constructed of stone there was some risk that they would dwarf their surroundings, though at the time this was generally evaded by skill in the design and by the introduction of subsidiary features, such as columns to the piers, tending to preserve continuity with the surroundings, as may be seen in the notable example of Waterloo Bridge, where the scale enlarges

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gradually from the façade of Somerset House, through the terrace on which this stands, to the bridge, which is itself diminished in scale by the coupled columns, an expedient employed on previous bridges with the same intuitive intention. No less skilful in this respect is the treatment of the bridges over the Seine, and more recent examples can be seen in those spanning the Danube canal at Vienna.

The substitution of iron did not at first materially change the position, as the cast-iron arched bridges, though giving an increase of span, were not larger in scale than their stone prototypes, while the airy form of the suspension bridge removed it from competition with more solid structures. It was only with the introduction of the girder bridge, whether of the rectilinear or bowstring form, that the scale began to jump away from its surroundings, and, where no special measures were taken to qualify it, to introduce the disaccord in this respect which is a feature of so many modern towns.

It will be well, before pursuing the consideration of special relationships such as these, to look into the fundamental factors primarily evoking a sense of scale. This starts naturally with the stature of man and his first needs in respect of shelter from the elements, therefore, as regards dwelling-houses, the scale takes care of itself, and even the pilasters and columns of Palladio and his school, applied with the intention of aggrandisement, rarely succeed in disguising the structural unit. Nowadays these embellishments are somewhat out of fashion in domestic architecture, and doors and windows of appropriate size are accepted as dictating the proportions of our homes. There will be

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some variation, but that not great, and as the scale of the lay-out must follow that of the buildings, we see that what was appropriate in Renaissance times can no longer be accepted for the two-storey houses, detached or in small groups, which are the standard types in England at the present day. This, though it has not always been recognised, is fairly well understood by those who have planned most of our housing schemes, and a more intimate type of design is general, giving less width to roads while preserving the desired sense of spaciousness by greater liberality in forecourts and gardens. Formal effects on large lines are clearly impossible, but symmetry and balance in the lay-out and grouping are still available as features in the designs. Passing from strictly domestic buildings to business ones, such as shops and offices, there will probably be a slight increase in the scale, but not such as would make the transition difficult were it not for the fact that the Palladian manner, abandoned in the design of dwellings, is retained, and even accentuated, in these, probably by reason of its being thought to give an impression of dominating importance in such cases. Not being here concerned with architectural aspects, we are not called on to give an opinion as to the extent to which an imposed scale, such as is effected by the inclusion of a number of floors in one unit, is admissible. If the surroundings are proportionate to this the civic harmony is maintained, but it is obvious that where a town contains these different types there should be a graduated transition from one to another.

Pursuing the subject further, we find another gap between the scale of our public and large commercial

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buildings and that of engineering undertakings. Railway stations were wont to be covered with roofs of which the height and extent overshadowed everything in proximity to them, and, as mentioned above, many modern bridges cannot be reconciled with their surroundings. Without prejudicing the logical treatment of these structural problems, it is yet open to us to challenge whether the solution adopted may not have ignored the aspect we are now considering without sufficient economic justification. While in some instances, such as that of the Forth Bridge, the engineer may be able to make good his claim that it was a case of this solution or nothing, in many others, notably the girder bridges across the Thames, we can be assured that the adoption of this type was simply due to the fact that their appearance was never considered in relation to the surroundings. The economic gain was relatively small and the æsthetic loss very considerable. Much injury has been done on these lines, and as it is only very gradually that this can be righted, all that remains to us is to see that in the future the considerations of scale and harmony are not overlooked.

But there are yet a few more words to be said on the question of proportion. As regards buildings alone, this is a matter for the architect, but with buildings grouped together in streets and open spaces, the relationships between solids and between solids and voids are the concern of the town planner. Our attitude towards town buildings is at present an eclectic one, coloured by our recollections of what pleases us in the work of former times. In England, at all events,

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we are equally content with street frontages in formal blocks, symmetrically arranged with a uniform cornice, and with those including a number of separately designed fronts irregular in height with the resulting broken skyline. Even accepting that either may be good, we make the fatal mistake of jumbling them up together, and get a Regent Street conforming to one and Oxford Street to the other. Consistency in general treatment, evident in many continental cities, is not a characteristic of our own.

Another factor in street design which seems to have escaped the attention of those responsible for our regulations is the relationship between height and width. It is often laid down that the buildings may be as high as the street is wide—absolutely the worst proportion that could be chosen æsthetically. While for all residential streets the width, for the sake of light and air, should not be less than double the height of the buildings, in business quarters it is usually necessary to allow a much greater height. Now, if we review the streets that impress us as interesting, we shall find that they divide themselves into two types, those lanes and streets that secure their effect by narrow proportions [the canyon type] and those that strike us as spacious and open. The first demands buildings at least half as high again as the width, while in the second the heights may not exceed two-thirds of the street width. Northumberland Avenue and the new Regent Street come between the two, and consequently they fail in having neither the verticality of the lane nor the spaciousness of Regent Street as it used to be.

The same principles are applicable to the circus, the

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crescent, and other limited open spaces. Oxford Circus no longer suggests its form, but becomes four truncated angles. The crescent is more flexible, but to secure the combined feeling of space and enclosure a square demands that the height of the surrounding buildings should not be more than one-third, nor less than one-tenth, of the distance between the frontages. It is unnecessary to review all the possible problems of this character arising in the laying out and building of a city as a work of art, but their existence is so often forgotten that no excuse is needed for a brief reference to the forms they most frequently take.



63. Northfield, near Birmingham. Treatment suggested with a view to Preserving the Amenity of an old Village

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64. Moscow. Radial and Ring Roads well defined

CHAPTER XX

Tradition

THE element of change always coincident with vitality in a communal organisation brings about the need to formulate new types of expression, which will in time result in a complete alteration in the aspect of the city; and while it is undesirable to place any restrictions on the facilities for providing for such new demands, it is one of our problems to secure that they are met without introducing discords between them and the traditional practices which have evolved the towns as they are at the present time. The old traditions were the outcome of the conditions under which they arose, and the proper course is obviously to expand and develop these to meet the changing state of affairs rather than to ignore them entirely and attempt to wedge in a new type of development based on "first principles" without relation to what exists. The argument against this is naturally that, the city being the result of a series of phases of development, it might be equally appropriate to go to work independently of the past and add yet another phase, based on the exact requirements of our own day. Such a course looks so logical and simple that it seems almost a pity to have to refuse its acceptance. These exact requirements are, however, a fiction; all requirements being in small measure material and, in far larger measure, psychological, and this latter factor would be, in the ideal community, materially influenced by continuity of tradition.

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In former days, when travel was less universal and the builder was little influenced by work outside his own town, it was only natural that the style of building should develop progressively and gradually from one manner to the next. Now that these conditions are changed, there is a much greater liability to a breaking down of the traditions and the importation of exotic methods.

One of our chief difficulties to-day lies in the fact that transportation facilities have changed the normal building materials in many districts. We cannot afford to disregard the economic aspect of building ; in most cases we are pledged to give the maximum convenience within our means, using brick where we should formerly have employed stone, and making other substitutions of a like character. As each material demands appropriate treatment, this adds a further difficulty to the task of harmonising the old with the new, yet with study and care a great deal can be done in the way of reconciling the general forms and colour schemes, even where different materials have to be used.

In the present day the purpose of artistic expression takes a small place in the interest of the community. To many this may be an unpalatable statement, but it is none the less true. The exceptional advances made of late in the application of scientific knowledge to material requirements must be paid for, and part of the price appears to be a certain degree of stagnation in other fields of activity, more especially in those arts having form and space as their basis. It is therefore all the more important that we should endeavour to maintain and pass on the traditions of periods more

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expert in these methods of expression than our own, awaiting patiently from generation to generation the time when the inevitable turn of the wheel will bring these activities once more into a prominent place in the human economy.

So far we have dealt mainly with building, and it may be assumed there is reason for believing that any attempt widely departing from local traditions is unlikely to be satisfactory ; but the art of civic development comprises many other things besides the buildings themselves. There is the framing up, as it were, and here we have again the task of reconciling new requirements with old, in a more accentuated form probably than in the case of the structures themselves.

It must not be forgotten that the outward and material appearance of a city is the natural outcome and expression of the life and ideas under which it has developed. The value of its tradition is consequently measurable by the value of the part it has taken in the history of human development. In appraising this value we must beware of taking too narrow a view, of forming our opinions too closely on the ideals of the moment. Such ideals are perpetually reconstituting themselves, forming new combinations, by the advance and retirement of their leading components, as in a complex dance movement. Thus it is impossible at a given moment to place comparative values on the influences that have governed the form of this or of that city, as we lack a reliable standard for our comparisons. Of course we all have our individual preferences, some for the acute mentality of the Greek, others for the dominant force of Rome, the vivid life of the Middle

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Ages, or the dignity of the Renaissance ; and perhaps even the despised " industrial age " may in future take its turn in exercising the fascination of a period when ideas and methods differed from our own.

Let us not forget those useful guides, the artists, pictorial and literary. How varied and multifarious are the things that have inspired them—from the subtle line of chiselled marble to the sombre masses of smoke-blackened kilns ; from the ordered beauty of the Italian garden to the accidents of form and mass in warehouses, derricks and smoke shafts.

We have, and rightly, the feeling that we ourselves have something to say in the development of the city, that with the recognition of a higher sense of communal life must come a more consistent and more definite manner for its expression ; but let us not, on the other hand, condemn without the most careful consideration the efforts that are perhaps a little too near us to have acquired the dignity of age, lest we fall into the hands of the fashion mongers, who are ever too ready to exploit the craving for novelty, and would persuade us that nothing can be so good as the method of the hour.

The supply of really imaginative work is limited in any age, and most assuredly the present one cannot claim to be exceptionally prolific in this respect. It is therefore all the more important that the traditions, both remote and comparatively recent, should be respected, and that nothing should be obliterated unless we are very sure that we can substitute something better. No historical detail should escape notice in our dealings with the city that lays claim to a past. In

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cases where no great development can be anticipated, the obvious course is to maintain the existing character, in so far as it is compatible with modern modes of life. We may not sacrifice the health or legitimate needs of the citizen in the interests of archæology, but the conflict between the two is far less acute than many are apt to imagine. Far more often the conflict is between defective taste and the claims of the past rather than between these claims and any genuine social demands.

In the city that has come down to us as a heritage from our ancestors without material increase in size, our main duty is to secure that the inevitable additions and modifications shall affect its character as little as possible.

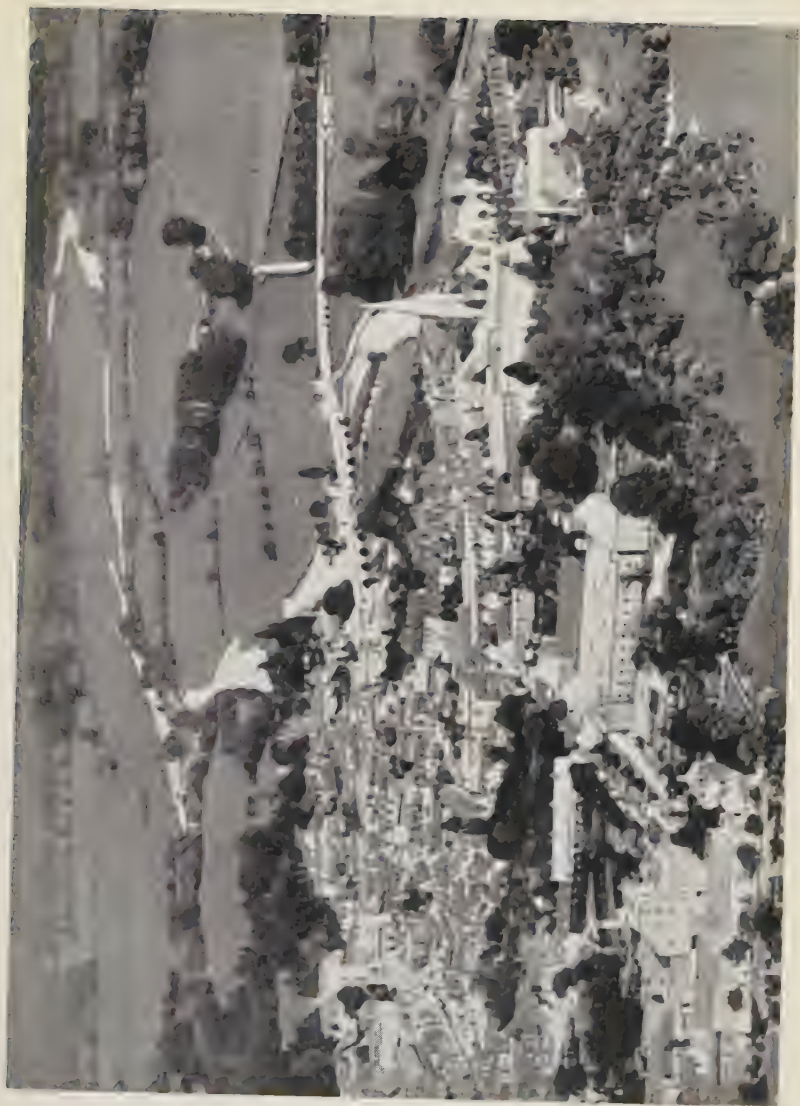
With the old city that is developing the problem is more complex. It will probably present features belonging to different stages of its development, which, while imperfectly harmonised, nevertheless have a value in marking the phases of growth, and we shall be compelled to strike a balance between their claims and those of modern requirements if we are to secure a consistent harmony throughout.

There are, in all old-established centres, a few features or structures that will be regarded as inviolate, but there are many more which it may be highly desirable to retain, subject to the proviso that their retention does not militate too greatly against the convenience or amenity of the city as a whole. They may be capable of adaptation, but if not will have to give place to new types of structure and arrangement. The transition is bound to introduce discords unless managed with more than ordinary skill, but if a definite

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reconstructive aim is kept in view, these operations will be less destructive to a unified harmony than if allowed to proceed by casual instalments.

When we come to the extensions of our cities we are often faced with marked changes in the views as to housing. The present movement towards smaller houses with more space around them has entirely altered the characteristics of city suburbs. The modern ideal is that suburbs should take the form of a series of villages rather than stretches of building. The natural grouping round suburban railway stations supports such a method, with the result that the outskirts of the city cease to convey the impression that they are parts of a whole, and might, for all one can see at any one point, be five, ten, or 100 miles away from the centre. On several grounds it may be contended that this is not undesirable. It is often felt that the big town is unpleasantly oppressive, and were it not for the exigencies of a livelihood there are numbers who would not dream of joining themselves to such a vast community, and would prefer to belong to a smaller one, such as the garden suburb simulates. The very large community only advantages a few of its members whose faculties are highly cultivated in some special direction. As far as a great many people in the cities are concerned, they would be far better, far more comfortable, and far healthier living in rural surroundings ; but the actions and reactions in great cities are necessary to produce that keenness of mentality in the few which gives the actual life, the actual vigour and force to the nation. This is not, as a rule, excited by the calm and quiet surroundings of rural life. For this the great



65. Abingdon. A Typical Country Town



66. Hanover. A Typical Mediæval Street

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cities exist. In this respect they are an essential part of the national economy, but their existence levies a heavy tax on the rank and file among their citizens.

Again, it may be argued that many of our larger towns have ceased to possess a definite and individual character for so long a time that they are now a hopeless agglomeration of conflicting elements which cannot possibly be brought together into a harmonious whole. In order to challenge this view we must look at the other side. The largest cities of a couple of centuries ago could be felt and realised in their entirety, while many, from some favourable point, could even be viewed as a whole, and to this day there are some of which the general character can be grasped from a neighbouring eminence. These, it may be admitted, are the exceptions, and the usual manner in which we comprehend the character of a large town is by a succession of impressions as we pass from one point to another. These impressions being successive, it follows that, under ideal conditions, they should lead up to and reinforce each other like passages in a musical composition.

First, let us consider how and when we are likely to receive these impressions. Normally, this would be during our approach to, or departure from, some point near the centre; in the first case there would be a gradual transition from natural beauty to formal dignity, in the other the order would be reversed. In speaking of a gradual transition, we do not mean it to be inferred that we may not, from point to point, vary the effects towards formal art or free nature. We may reach a subsidiary centre with formal lay-out and

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afterwards return to a looser and more open type of plan ; but as we pass inward each culminating point should transcend the preceding one in respect of importance and dignity, while in the outward course the domination of natural beauty should become more marked at each intermediate point. In the railway approaches to a city such effects as these are only attainable to a modified extent, and more or less accidentally, as we have never realised the railways as an integral part of our civic scheme, and have allowed them to develop on absolutely independent lines, to the detriment of all other interests. Our main roads were almost forgotten as means of transit, but now that they are once more coming into their own, through the acceleration of vehicular traffic, their importance is correspondingly increased.

With the railways little can be done ; but there is much that we ought to take in hand in amending and beautifying our road approaches. Before the advent of the railways a fine tradition had been established in respect of main roads, and it is for us to take up this tradition where it was dropped and develop it on the basis of our own requirements. In so doing a number of difficulties face us, the most serious being the linking up of new developments with the older ones of the ante-railway period. As far as traffic requirements are concerned, this is a mere matter of practical economics, difficult enough to handle, maybe, but simpler than that of bringing these two sections of our city into artistic unity.

The railway era exhibits not only a marked reduction in the spaciousness of main roads, but also a

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change in the mode of their utilisation. From this time dates the idea of the main road as a shopping centre. Prior to this, the great through road and the shopping centres were not necessarily identical. Now once more similar conditions have returned; but in the intermediate period the main road, losing the bulk of its through traffic while still retaining some of its traditional importance, became a kind of elongated market, so that by this time we have come to consider the important thoroughfare as a shopping street.

In actuality, the demands of the thoroughfare and the marketing area are utterly different, and no attempt should be made to combine them. The main road into a large town, if adequate to present and future needs, is too wide to make a good shopping street, and at many points too remote from the more populous areas to demand shop frontages. However, nearly all the main roads during the railway era developed as shopping streets, rather too wide for these but, at the same time, not wide enough for the through traffic now demanded.

We have to break through this zone somewhere, and the question now before us is how this is to be done. As a rule, financial considerations preclude drastic widenings, while the disorganisation of business would be enormous. Probably the best solution is to seek alternative routes and to improve these, for the purpose of separating the long distance from the local traffic.

The use of two roads instead of one is not a perfect solution æsthetically, but it is improbable that economic considerations would admit of one more satisfactory from this point of view.

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There is another aspect of the problem. An important route demands a certain firmness of definition and formality. If we seek for the traditional method we find lines of building on either side of the wide road. We have abandoned the use of blocks on this scale and demand that dwellings shall be spread over a much larger area of land ; our buildings are therefore relatively ineffective and are not to be relied on as an enhancement of the dignity of the thoroughfare.

What can be substituted ? We must have trees ; a fine avenue (double rows on each side if possible) is almost as impressive and dignified as the massive terraces of former years, and the farther we go from the city centre the more appropriate these avenues become. They need not be continuous, as this would be somewhat monotonous in effect. Where justifiable, a group of buildings of suitable mass and scale should strike the eye, and advantage should be taken of the proximity of water or hills to provide variety of outlook. The most attractive portions of a railway journey are found where a viaduct crosses a valley or where the line skirts a hillside overlooking a plain. With our road we can rarely depart much from the general level of the ground, but still opportunities may occur to follow the line of a river or to skirt high ground possessing an open outlook on one side.

We have now some idea of the general framework of our city—the centre, the earlier developments, the later and generally less satisfactory ones, and the programme for the future. We have a rough notion of how these sections or zones may be linked up together, and of the modifications desirable in order

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to bring them into harmonious relationship with each other.

The more open lay-out, the increased proportion of detached buildings, and the new requirements for administrative, educational and other purposes, involve of necessity a revised type of plan. Unnecessary divergencies would tend to break up the harmony of effect still further, so that we should endeavour, by maintaining the general characteristics of form and design, to secure as far as possible a continuity of manner with the old blending insensibly into the new.

Our city is bound to be composed of a number of different kinds of buildings expressing their differences, but these buildings may be held together by the thread of tradition in architectural expression, much in the same way as the actual masses and groups of building, discordant in the variety of their intention, can be unified by lines and masses of trees, linking them together and disguising or softening their discordancies.

CHAPTER XXI

Town Planning in the Dominions

THE towns laid out in the Dominions, mainly during the nineteenth century, have mostly followed the conventionally rectangular plotting usually regarded as typical of America, and though Canada is in the forefront as regards regional and civic studies, only a few recent towns and town extensions show a marked advance on the types general in the United States. Interesting schemes have been prepared for Vancouver and other towns on the west coast, and efforts are being made elsewhere to qualify, by means of civic centres and parkways, the monotony of the uniform rectangular plan which has also dominated practice in the newer Dominions of South Africa and Australia, though in the latter we find variations in schemes worthy of closer attention. Sydney, owing to its magnificent water frontage and irregular shore line, has had perforce to adopt a plan giving more varied interest, and though the width of 200 feet originally proposed for the principal thoroughfares has come down to 60 feet, which is inadequate to the present demands of traffic, considerable relief is afforded by the fact that many of the suburbs lie in the numerous coves around the magnificent harbour, and are quickly accessible by means of radiating boat services. A comprehensive improvement scheme is now in preparation which includes a high level bridge across the harbour at its narrowest point.

W. R. Davidge, who has studied the cities of the

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Antipodes, describes a number of them, and the following extracts from his work will give a general impression of their more important characteristics :—

“ The city of Adelaide is known throughout the world as a city town planned from its inception in 1837 and surrounded with a broad belt of ‘ park lands ’ half a mile or so in width belonging to the town. The original ‘ square mile,’ which was approximately the size of many colonial towns planned about this period, was laid out by Colonel Wm. Light on rectangular lines. The limited area of the first town was contained in a rectangle about one mile by one and a half miles, and any further growth had to take place outside the line of the park lands. In the case of the suburb first constructed—North Adelaide—an extension of the park lands surrounds it, but with later suburbs this ideal was, unfortunately, discontinued. Recent development has been much more haphazard, and even in the town itself the original blocks have been divided and subdivided to obtain more intensive use of the available land. Radiating roads, leading out into the country in all directions, were provided in the original plan, thus remedying one of the main defects in any rigidly rectangular lay-out of large dimensions.

“ The early plan of Melbourne, laid out in 1837, was arranged with the main streets, such as Collins Street and Bourke Street, roughly parallel with, or at right angles to, the River Yarra. The land was then divided into ten-acre blocks, and back roads 33 feet wide were laid out to give access to the back of each settler’s ‘ allotment.’ These to-day are narrow streets containing some of the most important businesses in the city.

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The later suburbs of Melbourne, originally separate settlements, have now coalesced to form part of a general rectangular pattern on the north and south lines originally adopted by the Government surveyor as a convenience for survey purposes. There are few diagonal or radiating roads, and such as exist are survivals of the early tracks made before the land was completely 'surveyed' on the north and south compass bearings so dear to the surveyor.

"Brisbane is a striking example of the failure of the rectangular plan on undulating or hilly country. In some of the suburbs of Brisbane the road gradients due to this cause are almost as much as one in three, although by departing from the rectangular plan a much easier gradient could have been arranged.

"Not only in the Australian city of Adelaide, but also in quite a number of early townships in New Zealand, a 'town belt' of continuous open land was reserved around the town. Dunedin, in particular, still retains this belt of open wooded land, which forms a particularly attractive feature for the town. In Wellington, the great difficulty has been the steep mountain sides which rise immediately at the back of the town, and consequently the very limited amount of level land available. A wonderful series of drives has been laid out along the seashore, and by a steady policy of tree planting on what remains of the original town belt, the amenities of Wellington are being steadily improved. Here, however, much of this belt has disappeared. The city of Christchurch was laid out about 1840 with the typical square mile of town, having its cathedral square in the centre and the whole surrounded by a belt of

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park land, the property of the town. A few years later, however, a railway tunnel was required through the neighbouring hills to the port of Lyttelton, and the whole of these town lands were sold to aid this purpose."

Mr. Davidge also notes an interesting, though by no means beneficial, effect of a legal enactment on town planning.

"One of the curious effects of land registration in New Zealand is that the compass bearing of each length of road must be stated ; hence curved roads are practically impossible in New Zealand, and the nearest approach to one that can be secured is a ' curved ' road consisting of a series of straight lines from point to point."

When it was decided to provide a new capital for Federated Australia, and Canberra was chosen as an appropriate location, the site was generally acclaimed as presenting good opportunities for development, and it was the more unfortunate, therefore, that the conditions of the competition for a plan were not such as could be accepted by British designers, who declined to enter. However, a number of plans were prepared in America and on the Continent, and that by Mr. W. B. Griffin, of Chicago, which was selected, is of marked distinction and displays many points of originality. While carefully considered as regards the allocation of areas for various purposes, the scheme binds these together by a well-devised system of axial routes, and the whole gains firmness by the orientation of the plan on a main axis linking up two summits. As this axis crosses the principal valley at right angles the degree of symmetry thus

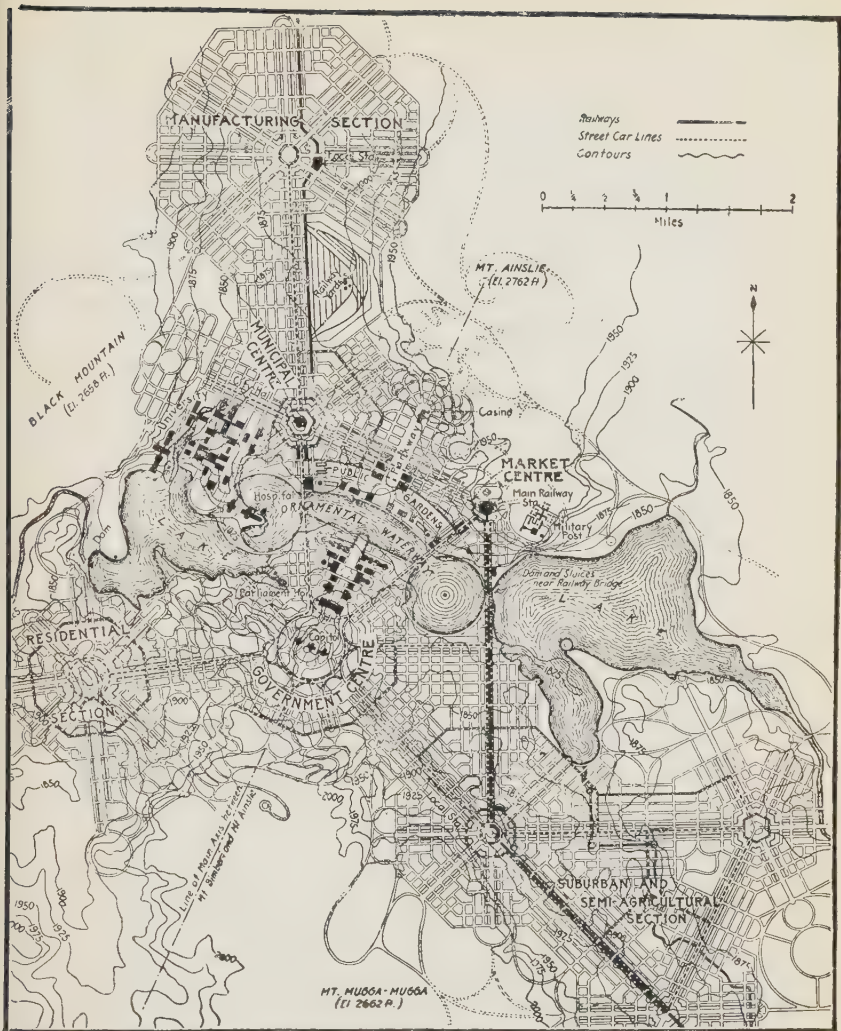
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secured allows of many minor variations in detail which give interest to the plan without allowing it to fall into confusion.

On the way to India we must stop to glance at Rangoon, where the rectangular plan was adopted with some justification, the site being level lowland, and though it was intersected by numerous channels these were not large enough to preclude reclamation. The starting point for the plan was made at an important pagoda then in existence, and the alignment was determined by the river frontage. Rangoon having now filled its original site, and having begun to extend into the undulating ground to the northward, the new extensions no longer follow the rectangular plan, but are laid out on lines dictated by the formation of the site and the directions of the main roads.

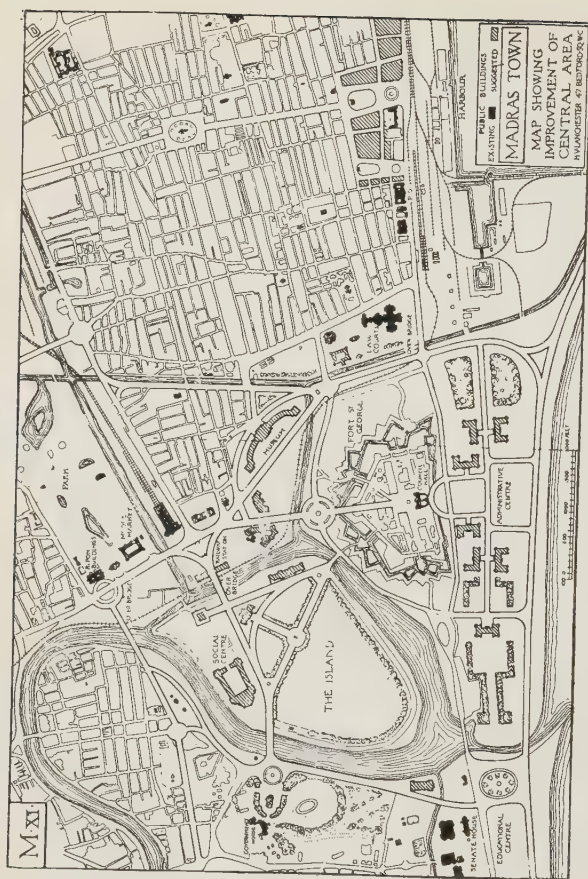
In India, entirely different conditions present themselves. Here the only cities which can be regarded, even comparatively speaking, as modern, are the seaports of Bombay, Madras, Calcutta, and Karachi, the first dating from the sixteenth, and the next two from the seventeenth century. As the controls were by no means rigid, and the country generally was organised on lines which might be termed mediæval in character, the problems of the town planner, both in these and in the older cities inland, are as comprehensive as any to be faced in European towns.

The above-mentioned seaports are not characteristic, being only semi-oriental, and even the other cities vary greatly, those of the south differing from those on the west coast, and these again from the towns in the northern provinces. For our purpose it will be most



67. The Accepted Plan for Canberra, the Capital of Federated Australia

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68. Scheme for the Improvement of the Central Area, Madras Town

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illustrative to describe a typical northern city. There is a closely-packed central area, filled with buildings three or four stories in height, and intersected by streets generally not more than 20 feet in width. In the older cities this was surrounded by a defensive wall which may or may not remain, and often some portions of this area have gone out of use and become derelict, though rarely completely unoccupied, as even where the houses are ruinous people contrive to live in some portion of them. Around this centre, which is sometimes called the fort, and of which the main streets are termed bazaars, will be found various forms of sporadic growth. In some directions there may be fairly good houses with gardens, and perhaps also a few industrial buildings, but in almost every case large areas covered with mud huts of a single story, like an aggregation of villages. Beyond this will be found the European population, housed in bungalows, with compounds of two or more acres which accommodate also the range of servants' quarters. The European may live for years at a place and never once visit the Indian city, endeavouring as far as possible to ignore its existence, if he is not concerned with it in some official capacity.

Town planning work in India started on a different basis from that in England. Here it is regarded as primarily the organisation of new developments, whereas in the East it arose out of health measures dealing with insanitary and overcrowded areas. Before the initiation of comprehensive schemes, a good deal had been done in clearing plague-ridden districts and opening new streets, while plague camps were a recognised sanitary measure; but apart from these, re-

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housing did not receive adequate consideration, with the result that new slums were constantly growing up in lieu of the old.

The principal feature of town planning in the East still remains the treatment of congested areas, but clearances are now made on more studied and conservative lines, while the provision of suitable sites for the accommodation of those evicted is regarded as of primary importance. The expedients to secure adequate rehousing depend on many varied conditions, but one feature cannot be passed over, namely, the necessity for giving close attention to the caste of those to be moved and for providing that locations for them are selected, not only with regard to occupation, but also as suitable in respect of surroundings ; they must not be near other groups which may be, from their point of view, unclean, and the access to each quarter must be so arranged as to avoid a confusion between groups which, by religion or custom, are distinct from each other. In some towns the caste groups are fairly defined, and the various occupations follow this grouping ; but in others they have already become confused, and industries are tangled up in a way antagonistic to good organisation. This is the more disadvantageous, as the Indian trader prefers to combine store and dwelling, so that there are often traffic difficulties due to the frequent transfer of goods from one district to another. While the nature of the sites to be dealt with, and the difficulties due to climatic conditions are, of course, subject to considerable variation, it must be remembered that all the more fertile land, carrying the denser population, is almost level, and relatively low

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lying, so that it may be cultivated by irrigation ; therefore much of the area around the cities is of this character, and the water is provided by rivers, wells or tanks. In the case of the first two it is practicable, without an undue outlay, to transfer the land to urban purposes, as the feed canals from the rivers can distribute water at other points in lieu of the closed outlets in the town area, while the operating of wells is so large a proportion of irrigation costs that this land has a much lower agricultural value. In case of tanks, as the reservoirs are called, much more studied reorganisation is necessary. In the decadence that preceded British occupation controls had lapsed, and the urban tanks and channels had become foul and contaminated, so that our officers, unfamiliar with the basic principle of the scheme, that of irrigation, conceived the only remedy to be the filling in of all these depressions, a method that made no provision for disposing of the volume of water due to the heavy tropical rains, sometimes 10 to 12 inches in a day. One of the duties of the town planner is to restore the old systems, or provide some efficient substitute for them, so that the flooding so frequent in many Indian cities shall be obviated.

Many other problems arise in the improvement and development of the Eastern city. Apart from those of caste and housing, already touched on, one meets with that of the family group and the distaste for separation, which induces overcrowding and provokes encroachments, by the division and the enlargement of houses originally planned for one family so that they can accommodate three or four.

Then again temples, mosques and graves must not be

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touched, and as these are to be found throughout the occupied area they often put very great difficulties in the way of reorganisation. Both the Hindu and the Mohammedan are much more inclined to build anew than to maintain the old, but as a religious building, however ruinous, remains inviolate, the number of these makes it imperative to exercise a great deal of ingenuity in devising an improvement scheme so that they will fit in with it.

The old Hindu civilisation included a very definite technique in which a rational organisation was indicated by means of rules, which were given a religious or symbolic significance. The old cities of the south conformed to one or other of the various established types, though subsequent centuries of neglect have often resulted in the partial obliteration of the original scheme. Nevertheless, an Indian city stimulates the imagination, and even where much of it is squalid and insanitary, it rarely lacks characteristic features and hints of beauty on which to frame afresh a series of effects, making the best of what is there and bringing order and decency into even the humblest streets. One never sees anything so depressing as the dreary regularity of the average English suburb.

India claims, in the new Delhi, the other modern capital, planned to occupy a large area to the south-west of Shah Jehan's city. The outlines of the scheme follow the Renaissance tradition of triangulations with focal points. The main axes N. to S. and E. to W. have good terminal features, but some of the subsidiary vistas are badly related to them and are aligned awkwardly on the principal buildings. The prepossession

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in favour of the equilateral triangle has involved the designers in a series of problems that are imperfectly resolved.

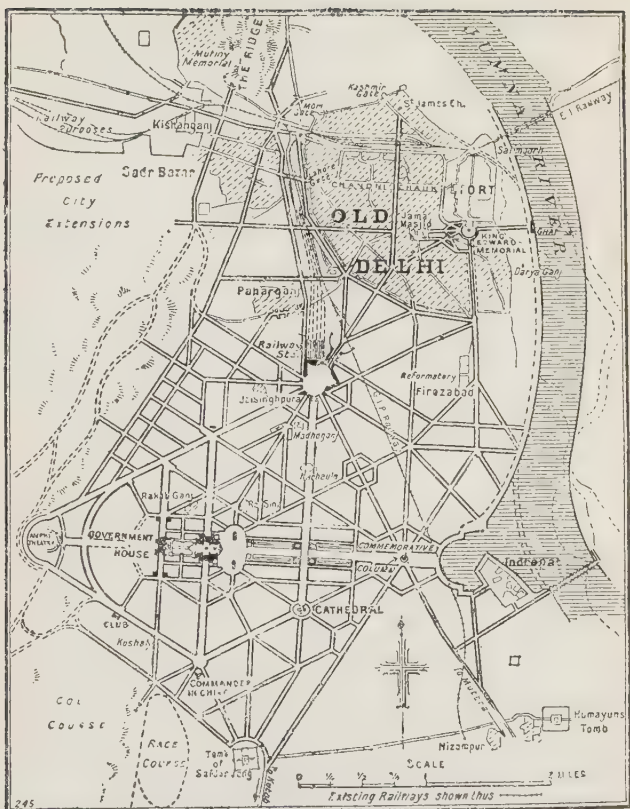
Throughout the tropics generally the advent of the European makes demands on the town planner for the elimination of conditions adverse to health, as an essential preliminary to planning, and the science of preventive medicine provides him with a programme that widely extends his field in such areas. Then, where there is a mixed population, the problem of complete or partial segregation adds other complexities. Town planning in the tropics must be treated as a special and separate study, since it introduces factors that could only be dealt with adequately in a special treatise on the subject.

CHAPTER XXII

Modern Practice

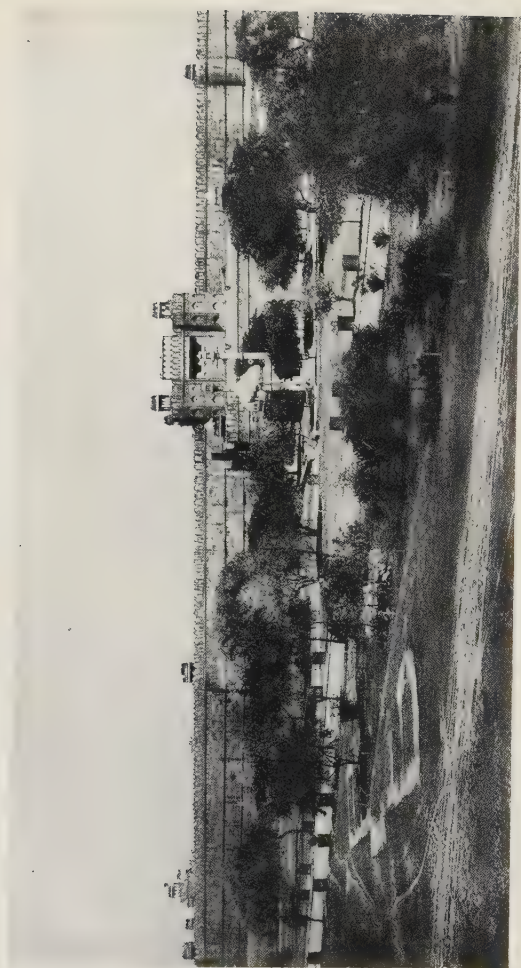
IN the earlier chapters we have briefly reviewed the developments in various ages to which can be traced the elements that find a place in the technique of town planning in our own day. We have seen the co-ordinated arrangements characteristic of ancient Rome ; the intimate study of building groups in relation to a naturally developed plan, the outstanding feature of the mediæval city ; and the road planning on geometric lines which dominates the Renaissance conception. Subsequently an endeavour has been made to review the component factors affecting the problems that confront us. It is now due to attempt the task of indicating how, by a synthesis of these various factors, our present practice in city planning has been built up.

In endeavouring to trace the growth of town planning practice as we see it to-day, we may go back to the eighteenth century, when, owing to national conditions, Sweden stepped into a foremost place in appreciating the need for comprehensive planning in town development. This was recognised in a legal enactment dating back to 1734, and after this several towns secured powers to acquire property where this was necessary to enable such planning to be carried out. Their position in this respect was strengthened by further legislation in 1845, and in 1874 the Act for regulating the planning and building of towns put the matter on a broad and a systematic footing, including both improvements and



69. Plan of the New Delhi

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70. The Fort at Delhi

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extensions. No other nation had at that time imposed a legal obligation to lay down a plan, though many plans had been officially prepared in one city or another. While Sweden must be given the credit for its pioneer work in regard to its legal enactments, and while these kept it well abreast of current practice, its town plans were more or less on the lines of those of other countries, and it must share with Germany the credit for substituting, in the latter part of the nineteenth century, a freer technique for the mechanical rigidity of road plans based on the Renaissance tradition.

About 1880, the Renaissance plan being then in possession of the field on the Continent and the so-called economic one in Britain and America, it began to be realised that neither was an adequate solution in view of modern demands. To review Continental conditions first, we find that it was customary to insist on a formal lay-out with roads proportioned to intensive building, irrespective of the formation of the ground and the tendency towards diminished density of occupation. The planning, in the hands of the authorities, was systematic, but like all official business, remained stereotyped and failed to keep pace with the change in demand. With us, on the other hand, the failure was of another character. Planning, being under the auspices of private enterprise, usually avoided the more obvious extravagances, but came to grief through being done piecemeal with no attempt to connect the individual schemes, and, what is worse, often with a deliberate attempt to avoid connecting such schemes with those adjacent to them; while roads, being only governed by a provision for a minimum width, were

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in many cases either inadequate or excessive. Moreover, it was quite a chance whether the schemes were skilfully laid out or not, this depending on the owner's judgment in choosing his technical adviser, if he employed one at all. In America the practice differed both from our own and from that of the Continent. The general lay-out was established by custom on a uniform rectangular plan, which had the defects, without the merits, of the Continental geometric one, and could claim as its sole virtue that it avoided the disorganisation of the individualistic development usual in England.

As the first movement towards the present attitude was in the Teutonic and Scandinavian countries, the course this took demands priority in our studies, and it will be well to begin by reminding ourselves that the firm control of the general plan by the municipality was largely due to the custom of dividing landed property among families, generation by generation, so that much of it was held in small strips impossible to lay out for building, and that, consequently, towns could only expand by co-operative action, which was rarely secured, and house famines were frequent. Municipal control was the most obvious remedy, but even then the difficulty of dealing with small ownerships was almost insuperable until the passing of the *Lex Adickes* gave powers to pool them, and, after planning as a whole, to return to the owners building sites proportionate to their original holdings. Only by this means could plans of the Renaissance type have been achieved, and even later, when more freedom was accepted, the method proved too valuable to be aban-

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doned. It would not in itself have produced any change, but owing to its putting the responsibility on the shoulders of active officials, it paved the way towards the acceptance of new ideas which brought about the departure from the formal plan.

This departure was influenced from two directions ; one, the obvious incapacity of the formal plan to adapt itself economically to irregular sites ; and the other the studies of Camillo Sitté on mediæval cities and the deductions he made as a logical romanticist in regard to the æsthetic superiority of what he claimed to be the " mediæval method." Now, without entering into an argument as to whether his interpretation of the illustrations he employs is correct, the fact is indisputable that he and his school entirely remodelled, in most ways for the better, the practice of city planning in Germany and the Scandinavian countries. Of course the reaction overshot the mark at times, and produced affectations of the picturesque that are too obviously evident as such, but, in the main, the release from an unintelligent formalism has been a great gain, more especially where it has harmonised the lines of lay-out with the natural formation of the site and its surroundings.

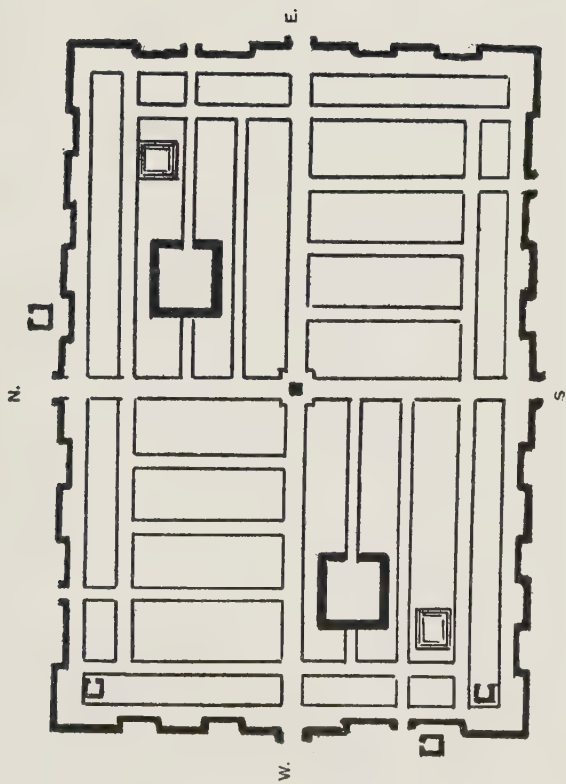
Though Sitté's book was translated into French, it did not affect the standards in France very strongly ; but ever since 1909, when Raymond Unwin (who may fairly be acclaimed the pioneer of this school in England) included in his book, " Town Planning in Practice," a very comprehensive exposition of Sitté's principles, these have taken an important place in the philosophy of town planning here, the more so as in this

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work, while giving varied illustrations of the German practice at that time, he covers many expansions of this and takes a broad outlook over the whole subject, based on his own experience. Apart from Professor Patrick Geddes's studies on the sociological aspects, no contributions towards our present technique in town planning have been of greater import than those of Raymond Unwin, and much of what is now our established practice owes its inception to his demonstrations. The value of his work, and of that of his contemporaries abroad and in this country who have done so much to establish the principles of town planning as we now know them, lies in the recognition that each kind of development has its appropriate treatment artistically, and that, instead of approaching the subject with a preconceived ideal, often based on conditions no longer applicable, the proper course is to investigate the necessities of the case and then to devise the right form of expression, not neglecting what history offers towards this, but only accepting it as a stimulant to the imagination.

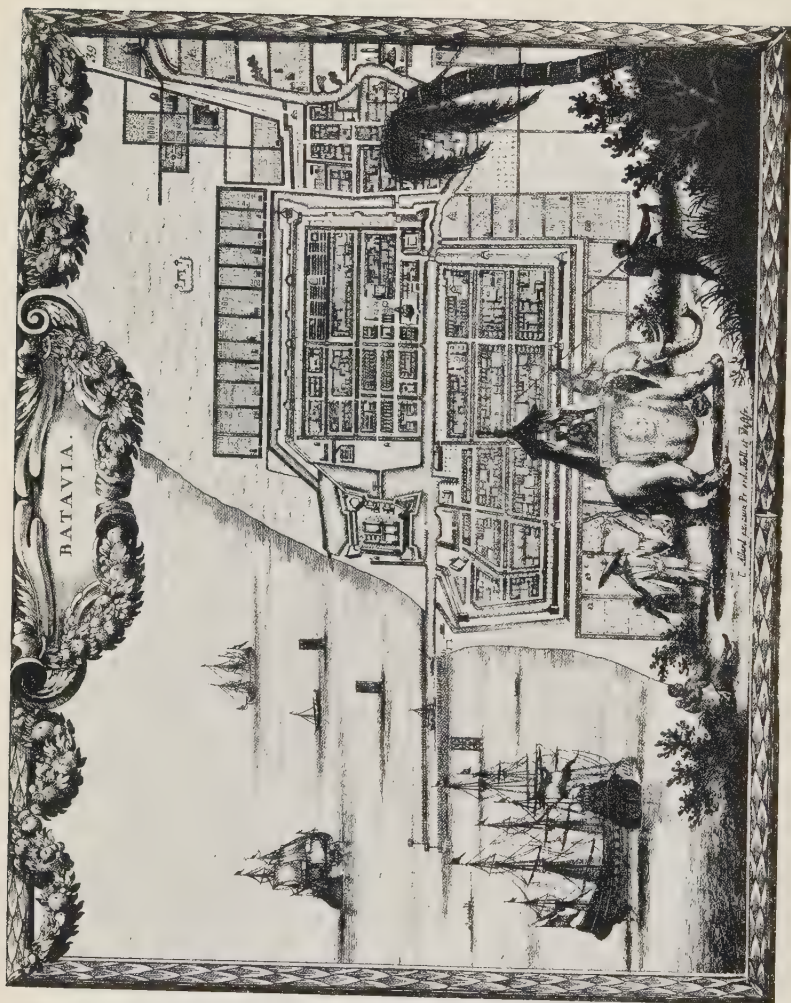
In illustrating what is involved by such a course it will be best to begin by citing a few practical considerations which must be attended to, and then to point out the relationship between them and the factors that conduce to harmony and character in the design as a whole.

For practical reasons a plan should be based on the contours of the site, as by following these it will adapt itself to the natural features and secure that they will reinforce the characteristic effect of the scheme. Again, common sense dictates that roads shall be varied in



71. Indian Plan for a City with Two Main Temples and Tanks

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72. Batavia, as Planned by the Dutch

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plan and design to suit the class of traffic to be accommodated. This, in turn, gives a sense of fitness which is an element of beauty. Trunk and branch roads are welded together into a pattern which should appear as inevitable as the growth of the forest tree from which the nomenclature is borrowed. Then we come to the utilisation of sites for the purpose of public buildings, shops, houses, open spaces, etc.; here the best allocations from the standpoint of convenience, will, with buildings of suitable design, exactly coincide with the demands of expression. We might continue the same course with regard to other features of the plan, such as the junctions of roads, the distribution of trees, and discuss at length all those details that must be worked out to produce a sound plan, but these few examples are enough to define the position of the town planner of to-day, whose faith is firmly pinned to the essential unity between reason and imagination. His work must be logical and reasonable, but without imagination no amount of logic will produce a good plan.

On the other hand, imagination must have material to work on, and this is provided by the factors that have to be taken account of and dealt with in such a way that the scheme is not only the most efficient possible but also gives an impression of balance which makes its every beauty appear as something so obviously right as to be inevitable. Thus the most important contribution to modern town planning has been the recognition that we must be at liberty to base our designs on logical requirements, without prejudices in favour either of formal pattern or of studied irregu-

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larity. In making a plea in 1910 in favour of an appreciation of the art of town planning, Raymond Unwin closed his remarks as follows :—

“ I believe that it is only when we have got beyond these prejudices in favour of so-called formal and informal work, and feel free to make use of either, recognising at once the naturalness of formality in design and the importance of subordinating mere formality on paper, to seize upon the magnificent opportunities which many undulating sites afford, that we shall be able to do the best work in town planning. If, to the other advantages of town planning, we are to add the completing glory of creating beautiful cities, let us not forget that we have not really learned to do any work until we have learned to do it beautifully. It seems to me the function of the town planning architect, who is specially trained to find beautiful forms of expression for practical requirements, is first to accept obediently the instructions which should be prepared for him by the sociologist, the economist, the surveyor, and the engineer ; and then within the limits prescribed to find a beautiful form of expression in the plan. It is a task as difficult as it is inspiring, for which he must prepare himself in whatever way is his equivalent to the prayer and fasting of the ancients. Having mastered all the practical requirements that have to be satisfied, if, in a spirit of respect for all of traditional interest or natural beauty that goes to make up the individuality of the city, and welcoming the difficult features of the site as affording greater opportunities for his art, the town planner can fuse the whole into one imaginative creation beautifully expressing the life of

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the city community, then, indeed, he will deserve well of his fellow men, for not only will he have added to the convenience of their lives, the health and comfort of their homes, but he will have provided for them and their children a wealth of beauty for their delight, ever growing in the grace of its appeal by the kindly influence of time and the enriching glamour of association."

Thus is summarised the faith of the craftsman ; and when it becomes that of the citizen also, we may hope for towns which will bear comparison with the best of all past ages.

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The scheme for the reconstruction of the central and eastern quarters of Tokyo destroyed by earthquake and fire might be assumed to afford a good illustration of modern practice, but this is hardly the case, as the conditions are responsible for unusual features, and the decision to exact the utmost economy in the proposals admissible is responsible for departures from the course dictated were the ideal of a modern capital permitted to determine the form of the design. The plan includes a broad ring route encircling the Imperial Palace, the eastern section of this route running parallel to, and relieving, the traffic in, the Ginza and Nihombashi, streets which respectively serve the retail and wholesale business centres of Tokyo. This ring road links together the important radial routes which, together with all the main roads and most of the minor ones, are to be widened and improved. It is so planned as to form part of the broad road designed to traverse the city from south to north, and to connect with the

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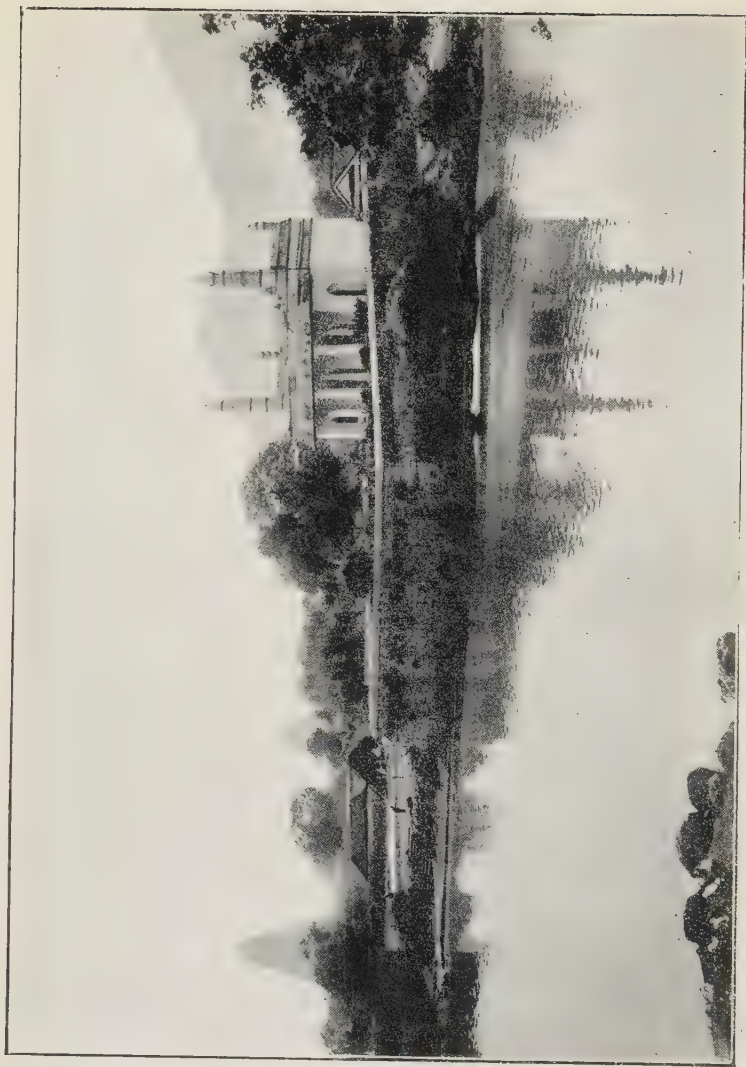
high speed road to Yokohama running southward, and at its northern end with the road to Nikko.

The canals, which take so important a place in the city, are also to receive attention, and a number of realignments and widenings are included in the scheme, though the modifications here are by no means so drastic as in the case of the roads, which will cover four times the area of those they replace. This extra ground will be provided in part by requiring every owner to give up one-tenth of his present holding, without compensation. Payment will be made only for further expropriations, the idea being that, as but little building work of a permanent character has yet been undertaken, no serious hardship will be involved, for it may fairly be estimated that the improvement of the frontages will raise the value of sites by at least ten per cent.

Open spaces are required to serve as refuges in case of fire, and in most cases these are to be secured by building all the primary schools with spacious playgrounds, a recompense which the great disaster has given to the children of the city. The fine parks that Tokyo possesses are embodied in the scheme, with some limited extensions, but the city, as a whole, comes far short of the European standard in regard to public open spaces, though, as some compensation for this, a liberal amount of tree planting is to be employed on the main roads. Again, owing in large measure to the system adopted of demanding a proportion of each site, it has not been possible to make much change in the existing lay-out, and as this is, in the main, a uniformly rectangular plan, the future city will still exhibit the



73. A Temple and Tank, Chidambaram, South India



74. A Mosque and Tank, Tiruvanamalai, South India

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monotonous effects inseparable from such a system. The need for economy may justify this as a general rule, but surely it ought to have been possible to vary it at salient points in order that public buildings and other features might be afforded sites enabling them to give interest and variety to the new scheme. While America, having discovered the artistic ineffectiveness of the "gridiron" plan, is endeavouring to extenuate this by supplementary radials and closed vistas, it is remarkable that in this case, where there is comparative freedom, these demands should have been ignored. Recognising that it is the desire of the Japanese to make their capital worthy to rank with those of other nations in dignity and beauty, it is only fair to point out this failure in a scheme exhibiting many merits.

CHAPTER XXIII

Social Demands

WE have now defined the general principles of the art of town planning as recognised at the present day, but, unfortunately, their acceptance by no means assures us that all future operations will be carried out in accordance with these principles. The art has still to receive much fuller and wider recognition before this can be hoped for. At the same time, in spite of the sacrifice of individual freedom involved, its social value is generally or conclusively accepted, and on this ground, if on no other, it has secured such a measure of support as to give it a place among the old established customs possessing legal sanctions for limiting personal activities where there was a risk of their conflicting with communal welfare.

Strictly speaking, the function of the town planner terminates when he has correctly interpreted the demands of the public, whose servant he is, and has formulated the best possible proposals for meeting these demands, *i.e.*, the best possible having regard to the means at his disposal, and in view of the limitations of various kinds that will inevitably be associated with operations so comprehensive in their character. At the same time the study of town planning, involving an intimate recognition of hygienic, psychological and social requirements, is bound to draw those who interest themselves in it beyond the strict limits of technical practice, and to encourage anticipatory visualisations as to the trend of communal developments.

SOCIAL DEMANDS

Reverting to our historical *résumé*, we can find no point at which social life remained stationary, however rigid the systems of control, and even after making allowance for the fact that the events of the moment loom unduly large in our eyes, it appears incontrovertible that the present time is one of more than ordinary activity in respect of such changes. While a detailed and elaborate forecast would probably meet the same fate as has befallen similar forecasts in the past, no one whose function it is to deal with proposals that may take two or more generations to reach fruition can avoid the effort of endeavouring to realise what conditions may be like at the end of that period.

We have two factors on which to base our estimates, the economic one, which changes with great rapidity, and the psychological one, which in any one race changes hardly at all. We have only to step back a century to realise the immense difference between the economic position of our own and other countries then and now, while we may go back three or four and find, after making allowance for the differences in environment, that the men of each race exhibit similar traits in behaviour. While it is true that, when a people secures an overwhelmingly predominant position, this position seems to hold within it the elements of decline, we must avoid confusing the political cycle with the much more subtle permanence of racial characteristics, the continuity of which could be confirmed by many examples.

Beyond just a mention of the parallelism that R. G. Collingwood finds between the arts of Britain, Gaul, and Jugo Slavia under the Roman Empire and

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those of the same countries in later times, and a reference to the similarity of the general attitude of the worker towards his employment and the dole after the plague of the fourteenth century and our own recent experiences, we must leave it to the reader to multiply illustrations of this persistence of national characteristics.

There is therefore little likelihood of a world-wide uniformity in the technique of this art, and this may be hailed as fortunate, for not only is it desirable in itself that countries should exhibit varied aspects, but also that these variations in ideals should exist to influence each other and maintain a certain fluidity in national developments. Each nation works in accordance with its own temperament and traditions, and by this course achieves a unique position in some particular directions, but, at the same time, there is a continual comparison being made between the merits of its achievements and those of its neighbours, with the resulting emulation in all points not definitely based on racial differences in ideals.

Here and there we have indicated, in general terms, the demands of our own townsfolk at the present time, and have been bound to recognise that the characteristic attitude of the Anglo-Saxon still influences Britain. The preference for open air pursuits and rural surroundings has so persistently dominated our race that it has brought us back, despite the fact that towns have been forced on us by a misunderstood economic pressure, to the ideal of the garden city and garden suburb. We have never really desired the city, and that is why our cities are, from the town planning point of view, so



75. Reconstruction of Tokyo

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76. Around Central Park, New York. Development without regulation.

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bad. Other nations have delighted in the city, and the pride of the citizen is reflected in its structure and embellishments. In England it has been merely tolerated as a necessary evil, and while a few travelled Britons have been able occasionally to impose civic features borrowed from abroad, these make no impression on the mass of the people, who attach but little importance to them.

The result is that, while we have been driven out of the country by force of circumstances, we have never become genuine townsfolk ; if we had, it would long ago have been recognised that our towns must be beautiful to look at in their own conventional way, must be clean, and not defiled by the smoke of the numerous firesides that are an admissible delight only where dwellings are not crowded together. The remedy now popular is to provide for the increasing population on lines simulating, as far as possible, the effect of the countryside, and to make this practicable by the provision of rapid transit facilities. From many points of view this is probably the soundest solution, but it must be accepted that it will preclude any rapid advance in the city centres, except from practical and economic points of view, by drawing the interest from these centres to the outlying residential districts. Of course it will be pointed out that, if there has never been a very strong feeling in favour of the dominant beauty and dignity of the city centre, no loss can be shown, but it is to be feared that many who hoped to see our cities emulating those of the Continent in these respects will be doomed to disappointment.

Deprived of an understanding public, no art can

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retain vitality, least of all one that depends on the expression of communal purpose, and unless we can regard ourselves as capable of idealising both rural and civic life, an anticipation unlikely to be widely realised, it is clear that the growth, or rather the re-establishment, of the rural ideal must take place at the expense of the civic one, to an extent that will, at all events, keep the standards of the city below those in countries where a large proportion of the people are integrally citizens.

It is characteristic that there are many sociologists in this country who hold that the city is parasitic and detrimental to the national welfare, and this view can be justified, inasmuch as that a nation which abandoned agriculture would be doomed, therefore the less the city is divorced from its rural environment the better the chance of survival. That the size of our larger cities is beyond what is desirable can hardly be questioned, but could all the imaginable reorganisations be effected they might be adapted to a wholesome civic life, with such ameliorations as would place this life almost, if not quite, on equal terms with rural conditions. The reconstructions that this would demand are, however, more drastic than we can hope to see effected in several generations, and in the meantime we shall continue to pay the toll that these overgrown towns demand in diminished vitality and racial deterioration.

The appearance of a city is the material interpretation of the life it contains, and thus it is that cities usually exhibit a definite character, and that merely imitative effects, independent of an inspiring cause, do

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nothing to build up a consistent and expressive harmony. For this reason our town planners get few opportunities to carry out their visions of dignified and impressive groupings, such as are to be seen in other countries. These owe their dramatic quality to a conception of the town as an absolutely distinct form of development, having its conventions of mass, proportion and scale, unrelated to nature except through the human medium. The faculty for appreciating these qualities can only arise with generations of town dwellers who have learned to delight in them. Few Britons have followed this road, and therefore our towns are rarely expressive of civic dignity, and the designer whose studies have made him more or less cosmopolitan is in the dilemma of either trying to force on his public something beyond its demands, or, more rationally, of accepting these latter and adapting his practice to the type of design they suggest. Nevertheless, even if the exponent of civic design is prepared to accept the limitations imposed on him by the social structure as he finds it, there will yet remain to him a wide scope for the exercise of his imagination. Though he may have to put aside many of the ideals he has derived from his comprehensive studies, he will be able to substitute a considered logic as to the expression of characteristics not without value in themselves. Town planning in Britain has already followed this road, and if it continues in this direction it may make its contribution to the international standards of design, which, even if insular in aim, will possess a definite value as an interpretation of recognised social demands.

A factor that influences the future course of city

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design is the increasing extent to which municipal control is taking the place of private enterprise. While the latter is by no means excluded from taking part in new developments, the tendency is towards increase in public ownerships, partly with a view to the facility this offers in directing future growth, and partly with an eye to securing for the community a share in the "unearned increment" that expansion brings into existence automatically. We are all aware of the attempt made to secure some of this increment for the nation, the complications this involved, and its consequent abandonment. Notwithstanding this failure, the principle that the results of communal activity should, as far as practicable, benefit the community, is widely accepted, and public ownership has been proved to promote this. Thus an efficient municipality finds it profitable to acquire property and undertake its development. This favours the preparation of comprehensive schemes considered more specifically from the aspect of the public interest, and though it can hardly be claimed that the highest technical standards are often reached, owing to the fact that it takes time for these to influence public opinion, a better basis than the individualistic one is provided for the lines of development. While the art of town planning is not necessarily dependent on public undertakings, any enlargement of these is bound to affect its future character.

CHAPTER XXIV

Technical Methods

FROM time to time a number of writers, among whom G. B. Shaw and H. G. Wells stand out prominently, have vouchsafed us their anticipations of what the world may be like in the nearer or further future. While it is not for the technical exponent of an art to take such distant flights as the poet or the philosopher, he is unlikely to refrain altogether from attempting to visualise the effects of some of the more obvious probabilities. We have discussed at some length the influences of stability in national characteristics, but we cannot allow these to disguise from us that the advances in science and its applications tend towards changes in the mode of life and, ultimately, in the ideals of what life should afford.

Agriculture can hardly be displaced from its basic position, but even this undergoes alterations due to scientific discoveries and transport developments. As a factor in human well-being, its essential purpose is strongly supplemented by the value of its activities in maintaining a good standard of physique, a standard that cannot be placed to the credit of many other forms of productive effort, owing to the adverse conditions inherent in their operations. Therefore the co-ordination of towns and their environment is at the root of all our problems of communal advancement. In former times this limited the size of the city and its dependent area, though these varied from age to age according to the better or worse organisation and security of trans-

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port. In recent times transport has improved with unprecedented rapidity, and the facilities have out-distanced our capacity for maintaining control over them.

Thus we have allowed the false economy of measurement by price values to take the bit between its teeth, and drag us from the road of the true economy that recognises racial welfare as an essential factor in the organisation of production. The quantity and quality produced is of less importance than the life such production involves, and though the majority has always allowed itself to be exploited at the expense of this life, it is the hope of the social reformer, who carries the standard for the town planner, that one of these days this criterion, of price values regardless of the other factors, will be generally pronounced an invalid one.

This in no way involves a negation of the benefits that science is every day conferring on us in the way of increasing productive capacity, using the term in its widest sense, to cover all facilities in location, transport, and transit. These are all to the good, and the only distinction between the so-called "economist's" attitude towards them and that of the town planner, is that the former omits the most important factor, the effect on the producer, while the latter places this first and considers the actual production a subsidiary question, which will decide itself quite efficiently when the ideals of life are sound.

We have now at our disposal advantages beyond any previous experience, and if we keep an open mind as to what these may give us, it is in our power to organise them to benefit all. Apart from the possibilities of flight, making demands on the town planner that have

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not yet been adequately explored, there are numerous types of provision for rapid transit, on the level, above and underground. If desired, a combination of these enables us to occupy sites very intensively, and as it is practicable to construct buildings fairly economically up to a height of 500 feet or so, it will be seen that at this extreme the possibilities, as exemplified in American towns, are far beyond those of a few decades ago.

These possibilities are mentioned because they may, under certain conditions, prove of great value, but at the same time there is risk in their employment without a most carefully studied programme in regard to the proportion of site to be covered and the provisions for access and communication. In the typical case of New York, there was not, until recently, any restriction on the heights of buildings, and consequently, in the business quarters, overbuilding has in many blocks deprived the lower floors of daylight and has caused acute congestion in traffic. The practice outside America has been to place a definite restriction on height, the usual average for business districts being about 100 feet, with various systems for gradual reductions in the outer zones. This is the safer course to pursue in view of the difficulty of securing diminished site areas in exchange for increased height, an alternative method which would, if capable of practical operation, afford advantages in the provision of increased light and air for a given volume of building. Such a course is little likely to be adopted, as it would in most cases involve more drastic replanning than is feasible in old-established centres.

In the United States the necessity for height limita-

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tions has now been recognised, and, though in most cases much greater heights are permitted than would be acceptable in Europe, the system adopted is a sound one, with a maximum height for frontage walls and a limiting angle above this, so that building in the central part of a site may be carried higher than the surrounding portions.

Having determined the maximum heights admissible, with regard to climatic conditions and the adequacy of communications, and the best system of limitation, there yet remain many factors worthy of consideration if the central areas of our cities are to keep pace with the advances that our command of resources make practicable. No one will contend that these are not in need of improvement ; for example, the discomfort of the streets in bad weather must, to every thinking man, appear an absurdity in view of the obvious expedients available in the way of protected communications. At one time there seemed a probability that we should follow the practice in more southern climes and adopt covered footways, but this was only a partial remedy, still involving exposure when crossing streets, and had, moreover, the disadvantage, owing to our sombre skies, of darkening the shop frontages and rendering them less attractive. The glazed arcade running from street to street is better in this respect, and would have been much more generally employed but for the sub-division of ownerships, which makes comprehensive planning difficult.

Now it looks as if we are moving towards another solution. The rapid increase of underground transit in the larger towns suggests that this should be expanded to afford access to all the more frequented buildings,



77. Skyscrapers and Bridges, New York



78. The Shelton Hotel, New York, showing the effect of Height Regulations

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such as the large stores, hotels and theatres. Already in New York there are a number of connections of this kind. A general scheme of subway routes linking up stations and buildings might surely be expected to more than compensate for the initial cost. The movement towards this has barely started yet, but when it gets under way the inevitable competition for such facilities will make it a rapid one. Not only does it offer the advantage of giving clean and easy routes protected from the weather, but also that of saving time and money at the busy hours when traffic congestion is acute. Those who frequent London restaurants and theatres must be familiar with the facts that the aggregation of these in a very limited area, and the concentrated traffic at certain times, make organisation and regulation extremely difficult. Street widening would do much less towards effecting a remedy than a two-level system of access, where one of them obviate the necessity for vehicles, which make much greater demands on space and on control than foot traffic. In London, for example, about half a mile of subway would suffice to link up some sixteen theatres and half a dozen large restaurants, with three tube stations on different routes. Less urgent, perhaps, but also advantageous, would be the connection of the large stores with the underground lines. The question has been raised as to whether we have followed a wise course in providing first for passenger traffic in our underground routes, leaving the transport of goods on the surface. Probably we were wrong in so doing, but we are now committed to this policy and must make the best of it, though there may yet come a time when it will be found

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necessary to contrive a better organisation for the collection and distribution of merchandise. London already has an extensive underground provision exchange at Smithfield, which might be made the nucleus for some system of distributing tubes to other centres or to important private establishments. Again, Covent Garden as a market has been obsolete for half a century or more, and if it is to retain its present site new means of access should be provided either by rail or tube. There is a tram subway within a hundred yards, and as this connects with routes running right to the verge of the town area, it might be possible to make such adaptations as would enable it to be used for transport at slack hours during the night.

All the possibilities in these directions will have to be explored sooner or later, but until the situation becomes desperate there is little chance of reform, for the dice are loaded against it. A few years ago a proposal for a goods clearing-house on American lines was brought forward in London, and, though it undoubtedly offered many advantages, as soon as it became evident that large vested interests would be adversely affected, the scheme was doomed. Naturally, when vested interests include valuable plant and organisation that might be thrown out of use, such disturbance must be taken into account when striking a balance, but more often these interests succeed in preventing even an attempt to obtain an unbiassed study of the question at issue.

There are other instances in which two-level traffic routes may be worth consideration. We see, for example, that the difference in use and value between

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the north and south banks of the Thames is in some measure due to the discomfort of crossing long bridges exposed to the rigours of our climate. Now there is neither practical nor æsthetic difficulty involved in designing a two-tier bridge, in which the lower tier could accommodate tram routes and covered footways and the upper one the open road and fair weather footpaths. In several positions the terminal levels are capable of adjustment, and where this is the case, bridges on these lines would be an economical method of improving the communication between the two sides of the river.

Mons. E. Hénard, who has made comprehensive studies as to the possibilities in street planning, goes so far as to suggest even as many as five superimposed roads, describing this as a many storied street, just as we have a many storied house. The surface road would take the ordinary traffic; immediately below this would be the tramways; below this again the subway for the various services and supplies, the sewers and removal of refuse; next the high speed electric railways, and at the bottom the lines for the transport of merchandise.

Naturally, it is only in places enjoying a climate euphuistically termed "temperate" that these expedients are seriously demanded. Man is not by nature troglodytic, and it is only as a remedy for existing defects that these adaptations are justified. At the same time, there is no reason why we should not adopt common-sense solutions for obvious difficulties. The work of the town planner is, with rare exceptions, that of making the revisions and adaptations suggested by new conditions, and such reconstructions as can be effected without disorganising too drastically the existing structure of the city.

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The above suggestions are merely illustrative. Their value is less as definite proposals, the validity of which can only be established by investigation, than as affording a clue to the attitude to be taken in regard to the future development of our towns. The examples have been taken from London, simply for the reasons that it is, among Englishmen, the city most generally known, and that the problems it offers are the most intricate and acute. Other great towns have their difficulties, and the need of the time is that these should be approached in a scientific manner, with the broadest outlook both as to amenity and economics. The science of city construction lags, at the moment, far behind the other sciences, mainly because it demands a degree of co-operation not easily secured, so that there is little encouragement for the individual exponent. An inventor can devise a new machine, and has only to succeed in demonstrating its utility to a few to secure its adoption, but it is quite another matter to gain the support of the community as a whole for a new type of civic organisation. Not only are larger interests affected, but the innate conservatism of the human race will resist anything involving altered habits until driven to it by very severe inconveniences.

The technical methods of administration, and the legal provisions governing these, are outside our range. They exhibit many points of interest, but, in view of the fact that several important works deal solely with these aspects, it is obvious that they could not receive adequate exposition in a book aiming at a general view of town planning as an art.

CHAPTER XXV

The Æsthetic Outlook

IS there a place for beauty in the city yet to be? Surely, if the art of town planning is to lead us anywhere, it must be to the restoration of cities to the position they once held as focal points in the considered harmony, which man, at all periods of civilisation, endeavoured to evolve by a studied revision of his environment in order to bring it into conformity with his psychological and economic needs.

The numberless attempts at a philosophical definition of beauty concern the artist but little, as his method of approach is by quite another road. We must, however, gather together a few fragments of these to help us towards a realisation of the principles, recognised or unrecognised, by which towns have grown into beauty in the past, and may yet do so in the future. The standards by which beauty is judged become increasingly complex as we move towards an enhanced variation in human mentality, a condition concisely stated by the phrase that "beauty is in the eye of the observer," and yet to accept this as the sole criterion apart from qualifications would lead us nowhere. Taking as our guides those who possess acute sensibility towards their environment, we find that this is evoked by a number of different aspects. To one, the beautiful seems to appear in the guise of absolute unity with function, such as nature exhibits in the growth of a plant or the proportions of an animal, and artifice displays in the lines of a ship or the structure

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of a Gothic church ; to another, beauty is a matter of the associations it calls to mind, by transporting him mentally into a world which is, or seems to be, peculiarly sympathetic to his temperament ; while a third has reached the stage at which beauty has become an abstraction in itself, not to be defined by any law of function or association. There may be yet other relationships between the human mind and its ideals, but a pursuit of these would involve us in the meshes of metaphysics and would only lead us away from the course to be followed. Even the last attitude of the three we have mentioned is of little avail to us, and we shall have to confine our efforts in the main to the demands of the first two, and to begin by estimating the relative force of these.

It seems likely that perfection of function is the basis of all beauty, but whether, as some claim, it is itself beauty, we need not attempt to decide ; for our purpose it will suffice to state that a falsification of function is, as Ruskin affirmed, a dangerous enemy of sound artistic expression. Here, however, we must pause for a moment to put in a word on the side of the exponent of beauty from its traditional aspect. The appeal of Ruskin, in its attempt to enforce the logic of function on the arts, has failed, owing to the fact that the majority appreciate the arts through the channel of their association with life, and to forbid the employment of features that belong to tradition removes for many the charm that derives from the story of past achievement.

Even in the practice of the arts themselves we find it the invariable rule that each of the more outstanding

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developments has grown out of that which went before, more or less rapidly, according to the imaginative vigour of the age. The expression of the new demands has, in the long run, taken material forms, only departing step by step from the old. Deliberate revivals have broken this continuity, and these, though a less rational manner of progress, have been of value, as they could have made no headway against traditions which were adequately expressing the spirit of the time. In town planning, to a greater extent than in most other arts, do we find the traditions strongly entrenched, and in the aggregate they receive a full measure of respect. Unfortunately this is often paid to the wrong type of tradition, those of real value being neglected while some that could well be dispensed with hold their ground. For example, there is urgent need for a complete reconsideration of the general structural organisation in such matters as the distribution of activities and the system of communications, but in these cases it is assumed that what has suited the past will be appropriate to the future. On the other hand, many of the buildings show departures from the established scale and manner, not by reason of changes in constructive method, which might be an adequate excuse, but solely through a desire to emphasise the new at the expense of the old, as in the case of a rural owner who refused to build a stone cottage in a Cotswold village for fear people should not recognise that it was a new one. Lest it may be imagined that this indicates an unusually primitive mentality, we may point out that the same spirit is evident in many of the recent buildings in the metropolis itself.

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Change in the form of our cities is inevitable if they are to hold their own in the world competition for organised production on lines consistent with national well-being, and it is to the art of town planning that we must look for guidance as to how such changes can be given appropriate expression, harmonising the new developments with what it is necessary or desirable to retain of the old. Such problems must be faced in the broadest possible spirit. In the chapter on Tradition, we have already dealt with the claims of the past, and it now devolves on us to consider those of the immediate future. We may anticipate that our large towns will be divided more specifically into two sections, one concerned with production and commerce and the other the residential area. These may sometimes, but not invariably, take the form of a central group and an outer ring, and their relative locations will determine, to a large extent, the type of design. Normally, the dominant masses of the commercial and industrial buildings will be the more obvious features from distant points, and though they will rarely be planned with a definite idea as to their effect, we shall often be able to find interest in the accidents of grouping that they exhibit. The main commercial centre will be more adequately emphasised by the inclusion of the public buildings that ought to dominate it, but there is a risk that, following the example of America, these will be overshadowed by some of the commercial structures which may advertise themselves by lofty towers or domes. It is, perhaps, an open question whether this should be accepted as typical of our times, or rejected as detracting from the expression of

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the dominance of municipal government. If we are thinking of the impression of the city seen as a whole, we are less concerned with these alternatives.

Passing on to the residential districts of the modern town, these will make but little impression in a general view, except where the larger buildings designed for public purposes are grouped. The trees we delight in are bound to dominate houses of the type now demanded by all classes, and give a general park-like effect when these districts have acquired the permanent character aimed at in their planning.

These general effects, being less often the aspects of the city that strike the eye, are not of the same importance as the more intimate pictures that come to our notice at one point or another, made interesting, or the reverse, by combinations of vista, grouping, colour and outline. The importance of a general harmony in the treatment of the buildings, and of good proportions between these and the spaces around them, has already been emphasised, but we need more than this if the city is to create the right impression when we are within it.

Variety in unity is what we seek, varied effects secured by the appropriate grouping and embellishments of the more important buildings, unity by a consistent treatment of the whole, avoiding affectations and freakish attempts to attract notice where increased emphasis is not justified by purpose or by situation. Such emphasis is admissible only in special cases, more particularly at centres of public, commercial, or social importance, and if not limited to these there is bound to be conflict and confusion. As yet it is hardly

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recognised that a city must be regarded as a whole, just as any other work of art, plastic, musical or literary, so that we rarely escape this confused and distracting effect. The treatment in detail of the buildings and their accessories is a matter for the architect and outside the legitimate realm of town planning, though we must recognise that the latter divorced from the architectural aspect is a futility.

The discussion of what are, or what are not, the right modes of expression for the city might be pursued in many directions, but present conditions suggest that little would be gained by this. The main reason why we have so little beauty in our cities is, not that the capacity to produce this is lacking, but that so few among us realise that there is any real necessity for the city to possess this quality. Even those interested in one or more of the recognised arts rarely apply their critical appreciation to civic design, and seem quite content to accept many shortcomings as inevitable. The general attitude towards this question will need a radical change before the artist will be permitted to exercise his imaginative faculties in this field of operations. At no time has he failed to answer the call, but the call must come first. When it comes, then will town planning fully justify its claim to rank as a fine art.

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